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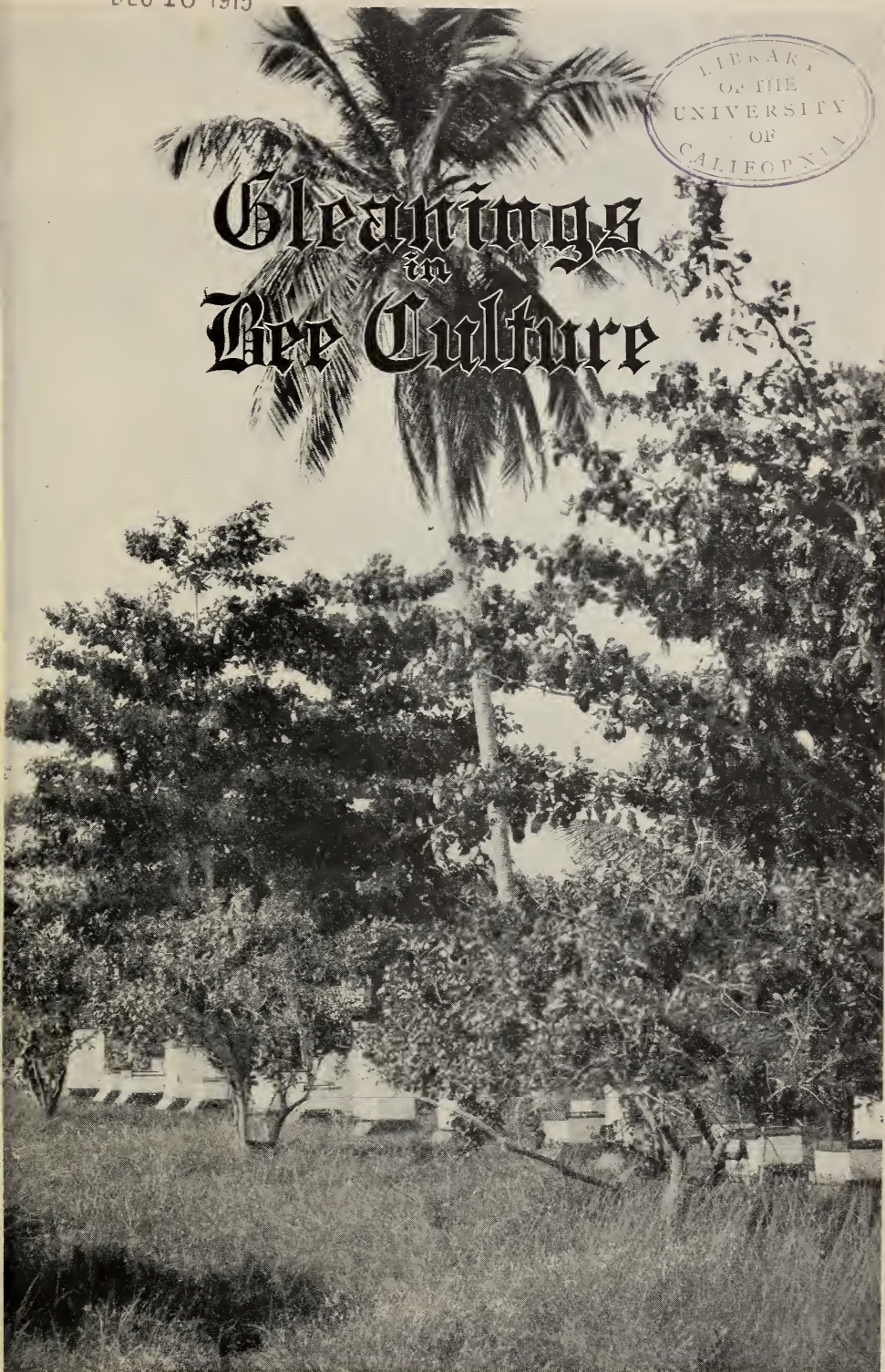
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DEC 10 1915



# Gleanings in Bee Culture





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Pictorial  
Review  
1 Year  
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Gleanings  
in Bee  
Culture  
1 Year  
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**A GLIMPSE OF THE PICTORIAL REVIEW FOR 1916.**

Pictorial Review has made a reputation for its worth-while fact articles, and special attention will be paid to this part of the magazine in 1916. Mabel Potter Dagget is at work on a series of articles entitled, "Phases of Feminine Unrest." There will be a series of articles by Anna Steese Richardson, author of "Better Babies and Their Care," on "A Nation-wide Clean-up Campaign."

Among other writers of special merit whose best work will appear in Pictorial Review in coming months are Dr. Orison Swett Marden; Helen Louise Johnson, Chairman of the Home Economics Department of General Federation of Women's Clubs; Dr. Frank Crane, and others.

**STORIES.**—With Pictorial Review you actually get four great \$1.50 novels worth \$6.00, which will appear in serial form in Pictorial Review during 1916. These four complete book-length novels from four of the most popular living authors will sell for \$1.50 each after they have appeared in Pictorial Review.

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**The A. I. Root Company, Medina, Ohio**

# Gleanings in Bee Culture

Published by The A. I. Root Co., Medina, Ohio

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## EDITORIALS

A REPORT of the Ohio State Beekeepers' convention will appear in our next issue.

THE double telescope covers do not blow off in a high wind like the single-board covers. We have had ample evidence of this at several of our outyards of late.

### The Cover Picture—A Porto Rican Apiary

JUST as all landmen love the sea, whether they have ever stood upon the shore or not, so every inhabitant of the temperate zone sometimes feels the call of the tropics. The land of palm and pepper has a strong fascination for us all whose homes are half-way up toward the pole.

The waving cocoanut of the cover picture stands sentinel over an apiary of some forty colonies, the property of Haydn Randall, of Garrochales, P. R. The low trees in the foreground are grapefruit, the remnant of an abandoned grove. Just back of them are almond trees.

Mr. Randall has built up his apiary of twenty colonies brought to the spot about a year before the picture was taken. The section is not an excellent one as bee pasture, since most of the land is devoted to the culture of sugar cane.

### Dadant & Sons

IN our issue for Oct. 15, page 850, after giving a general writeup of the general field meet at the home of the Dadant & Sons, Hamilton, Ill., we promised later to introduce the members of that firm to our readers. We now have pleasure in doing this. See page 996 this issue.

Mr. L. G. Saugier is a son-in-law, who, together with the sons, makes up the personnel of Dadant & Sons. They all appear to be men who are willing to take off their

coats and work whenever necessary. As we have already explained, each has a department of his own, and the Dadant business, presided over by the father, C. P. Dadant, runs just like clockwork.

While they are direct competitors of the A. I. Root Co., they afford the kind of competition that boosts, not their own business alone, but others also. They are most emphatically not the kind of competitors who are jealous of another's success. That they have made a success of their business is shown by the general air of prosperity about the plant and about their homes.

Theirs is the kind of organization that is destined to continue, because it is bound by blood ties—the strongest kind of ties this world knows.

### Is there a Disposition to "knock" Extra Yellow Bees?

WE have been accused by one of our advertisers of unfairly "knocking" yellow bees; and perhaps he would almost think that our correspondent, Mr. J. L. Byer, in his department, page 971, this issue, and the editor were working in collusion. The fact is, we did not know before his opinion on the subject. We have contended that not *all* yellow bees are inferior; but so many had proven such that we thought we were only doing our readers a real service by entering a word of caution. Some breeders of these bees breed, first, for honey production; second, for wintering qualities; third, for color. When extra-yellow color is secured with the other necessary qualifications, there is no objection, of course, to the bright yellow. Other things being equal, they should have the preference. But in some instances, at least, color seems to have been the only desideratum. Too many yellow bees have been first to die during winter, and too many of them have been cross—very cross; hence we have felt



it to be our duty to say to those who breed extra-yellow bees that these undesirable qualities should be eliminated. This does not mean that some have not done it.

The greatest complaint, however, against some of those who have bred extra-yellow bees was because they advertised five-banded stock, and furnish only the three and four banded. The terms "five banded" and "yellow all over" have been eliminated from our advertising columns, and now the term "golden" or "extra golden" has been substituted. This is better.

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### Not too much Packing, but too much Snow

IN our issue for November 1, page 905, Mr. A. J. Knox has an article on the subject of quadruple winter cases. Referring to this, one of our correspondents, under the non de plume of H. I. Bernation, thinks Mr. Knox must be mistaken. He writes:

The data in the article by A. J. Knox, November 1, pp. 905, 906, do not seem to be such as to warrant all of his conclusions. He says that the first year he leaned covers over the entrances, and when the bees were found dead outside he blames their death on too much packing. Now he omits these covers and gives less (insufficient) packing and gets better results. He deprecates bottom packing, but commends snow for that purpose. With a 40-mile breeze the scant (twelve bushels to the case) packing would probably be no better than single-walled hives were it not for the providentially provided snow. It would be interesting to learn how Mr. Knox found out that his bees got too warm when completely covered with snow, and why upward ventilation is needed in thoroughly packed hives. The loss of four per cent seems to be smaller than usual. Is this good wintering? Should not Mr. Knox try packing his bees thoroughly and see what happens? His creosote stain sounds good, but it is not clear why he prefers thin lumber unless it is on the ground of expense.

H. I. BERNATION.

Mr. H. I. B. is correct. Too much packing under and around each hive certainly can do no harm, and it may do a great deal of good. Putting a board in front of the entrance of a colony during winter as he did to shut out the cold wind looks very fine in theory, but it nearly always proves disastrous. The bees apparently become confused, lose track of their entrances, and die outside around the hives in thousands. We tried out that scheme years ago, at one of our outyards, and found it to be a failure. Mr. G. M. Doolittle, at the time, noticing that we were giving this thing a pretty thorough test, warned us of the results, and we got them all right, in that we had the biggest loss at that yard we ever had. Mr. Knox should not, therefore, attribute the loss of bees of one winter to *too much packing*, but rather to too much snow and to the boards in front of the entrances. Screen-

ing the wind from the entrances by a slanting board or cover is one of those pretty things in theory that do not work out well in practice. When hives are "completely covered with snow for several months" it is enough to kill any bees. If the entrance is closed with snow or ice the hive, whether packed or not, will develop too much heat, and, of course, the bees will soon die.

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### "Slightly Exaggerated" again; Pulling Stings in Lots of 10,000 to Cure Rheumatism

WE recently gave an address on bees, accompanied with a live-bee demonstration, before a Rotary Club in one of our big cities. These clubs are made up of live business men whose aim is to push business. At every session they call on an outside man to give an address, generally along his own line of work. It was on one of these occasions that we gave a talk on bees that we happened to mention incidentally that there was much ado in the newspapers about the wonderful properties of bee stings for the cure of rheumatism; and while we added that stings might be valuable in some kinds of rheumatism, we believed that, in most cases, the results were only negative. We also stated that the homeopathic school of medicine used bee stings in making up a medicine known as "Apis Mellifica;" that we had years ago filled two or three orders for ten thousand stings; but distinctly stated that we were not accepting such orders now. We did not offer any opinion as to the value of these stings in curing diseases.

We have learned by experience that it is best to be cautious in the presence of newspaper men, and so we were on the occasion mentioned; but imagine our astonishment on seeing in several papers for a week or so back some statement to the effect that the A. I. Root Co. was pulling stings in lots of 10,000 from bees, and then sending them out broadcast over the country to cure rheumatism! Wow!!! The story has appeared in so many forms, and so awfully exaggerated, we are wondering what our subscribers think we did say. As it was, we have got considerable free advertising. All we can say to one and all is that we have no bee stings for sale, either to the homeopathic schools of pharmacy nor to the thousands of sufferers all over who have rheumatism. When bee stings do "cure" it is our honest belief it is the outdoor air coupled with enthusiasm and exercise that does the business. A good garden and a good hoe will do the same.

## Distance Bees Fly in Quest of Stores

WE desire to indorse what our correspondent, F. M. Baldwin, has to say on this subject in this issue, page 987. We have traveled quite extensively over this country; and while we have found occasional locations where bees would fly five miles and sometimes even further, we are satisfied that they seldom go over  $1\frac{1}{2}$  miles, and usually not over a mile. A great many times our own bees at our outyards seem to go less than three-quarters of a mile; and yet many years ago we found our Italians, that we were just introducing, more than three miles from home. There were no other Italians in the locality, and so we knew they were our own bees. That they do this generally in this locality is not true.

It has been stated that bees have long-range vision. When the country is somewhat mountainous or hilly they are known to fly from one hill to another, the distance aggregating five miles. Similarly they will go across a body of water; but on ordinary level wooded country they will fly scarcely over three-fourths of a mile. It is our opinion that they seldom go more than three-fourths of a mile. Our bees, at one yard, at least, seem disinclined to fly over a piece of woods half a mile away. They will go up to it and into it, but will not fly over it.

The localities in and about Medina will not support, either for comb or extracted honey, much more than about 35 colonies in a place; but there are places that will support anywhere from 200 to 500 in one location. The late E. W. Alexander's location at Delanson, N. Y., was a case in point. From that apiary site buckwheat fields could be plainly seen three and five miles away. When this is the case the bees have an opportunity to see a long distance. If on an elevation they will fly far across a valley. If on a plain, as in the West, if no shrubbery or wooded country is in the way, they will go sometimes two or three miles, and sometimes even five. We have cases of this in some of the alfalfa country.

The conditions in and about Bradentown, Fla., are not such as to favor long-distance flights. The country in the wild state is covered with pines, swamp lands, and hammock land, and in the cultivated state with citrus groves. There is almost no territory about Bradentown that is free from growth of some kind, and that is the reason why the range of flight is so short.

If our theory is correct, that the flight of bees in quest of nectar is dependent on the distance they can see pasturage, it will help

us to determine the distance and location of our outyards, and the size and location of apiaries will make all the difference between success and failure. The question is a good one to discuss during the winter months, in order that we may arrive at some definite conclusion by next spring.

## A \$30,000 Damage Suit against a Silver-smelting Company for Alleged Damages to the Beekeeping Interests in the Vicinity

FOR some time back there have been rumors to the effect that a silver-smelting concern in Canada was causing widespread damage to the beekeepers in the locality. Attorneys from both sides have approached us, asking for information concerning other cases of this kind. The only one to which we have been able to refer is the one recorded on page 616 of our May 1st issue for 1907. At that time it appears that the smelter people settled with the beekeepers in the sum of \$60,000. The case was long drawn out, and after a long and severe struggle the smelters in the Salt Lake Valley, Utah, settled on the basis above mentioned.

It was stated at the time that prior to the advent of the smelters the Salt Lake Valley was the banner bee country of the state; that there had been kept up to that time as many as ten thousand colonies of bees. At the time the statement was made, it was alleged that less than ten colonies were left. One beekeeper lost a thousand colonies. It appears that each of the smelting companies paid \$15,000 each, or \$60,000 in all, which amount was probably distributed among the beekeepers claiming damage.

In several trips we have made in various parts of the western country, we heard complaints of the destructive action of the smelter gases on bees and vegetation. It has been said also that the gases not only kill the bees but destroy the plants that furnish the nectar supply.

Within the last few years we have heard nothing about any further complaints except the one originating in Ontario, Canada. How the beekeepers of Salt Lake Valley came out at the time we do not know. We certainly have subscribers in the Valley now, and are under the impression that the smelters are still operating. Whether that settlement of \$60,000 was a settlement for all time we do not know.

Some time last year we wrote to Lewis Minor, one of the foremost beekeepers of Ontario, Canada, for particulars concern-



ing the suit against the smelting company. He writes as follows:

A movement was started in preparing this action by the beekeepers in 1912 against the silver-smelter which goes under the name of the Coniagass Reduction Co.; but the writ was not issued until June of this year. We expect it to be brought before the courts in November. Following are the names of the beekeepers bringing this action:

John Newhouse, Mansford Niles, Peter Warner, Henry Ackrigg, Wm. Selby, Mrs. Adelbert Clark, John R. Secord, Robt. T. Miller, Wm. Craft, Edward Willix. There were several others who claim loss, but did not go in with those trying to recover damages. All the bees were lost within  $4\frac{1}{2}$  miles of the plant—about 700 colonies—as soon as they began operating six years ago. The beekeepers interested in this suit are claiming \$30,000 for loss of their bees, appliances, and honey crops for six years. I understand there are many smelters in the northwestern and eastern states that did considerable damage to the livestock industry, and also killed bees.

I am acting as agent for the beekeepers; and if any one can give any information, please send it to me. This case will, no doubt, establish a precedent for others losing bees in this way.

Smithville, Ont., Sept. 4. LEWIS MINOR.

The attorneys representing the beekeepers are Bradford & Bradford, of Dunnville, Ontario. Any beekeepers in the West or elsewhere who can give any information would do well to consult the attorneys prosecuting the case. We will keep our subscribers advised of any further developments.

## The Embryology of the Honey Bee—A Review

BEEKEEPERS know that about three days after the egg is laid by the queen there hatches from it a small, white, worm-like larva. Where this larva comes from, how it was formed, and why it is as it is, are questions that perhaps have never occurred to many beekeepers. It may be asked, "What difference does it make to the practical beekeeper?" This question is hard to answer if a dollar-and-cent reply is expected; but if our interest in the honeybee is limited by the financial boundaries, then beekeeping becomes dull drudgery, and the fun of the thing is gone. A good beekeeper is a broader man than that. His interest is immediately aroused when a new investigation of the bee is announced, and he wants to know about it.

Dr. James Allen Nelson's book, "The Embryology of the Honeybee," is doubtless the most thorough discussion of the development of any insect yet published. It is the only publication in English to which we may go for information as to what happens in the bee's egg. The reader who is unfamiliar with such work will not follow all that is in the book; and even the person who has had some technical training may

have a little trouble in places. We must have something to put into a book before we can get everything out, and this is as true of a practical book as it is of a scientific one. However, every intelligent reader of this work will rise from a perusal of the book with a consciousness of a little less mystery about the development within the egg, and that is worth while. The book furthermore continues to give information when studied.

Each system of organs is traced from its earliest discernible stage to the form which it has in the young larva; in fact, the development is carried from the egg immediately following fertilization to the well-organized larva. To the student who desires information concerning the development of the honeybee as compared with that of other insects, full information is included. A comprehensive bibliography is included. The illustrations, all but two of which were drawn by the author, are remarkably clear in the reproductions.

Dr. Nelson is entitled to our thanks for giving one more important stone to the foundation of beekeeping. It may seem a long way from his contribution to apian practice; but the foundation of beekeeping can be learned only by scientific investigation, and an extended contribution such as this makes the superstructure all the firmer.

The book is issued from the Princeton University Press. It was too large to be included in the publications of the Department of Agriculture, and beekeepers are indebted to the Princeton Press for providing a permanent record for this investigation. The presswork is excellent. The management realizes that this work will not be one of the season's "best sellers," and their primary object in accepting it was not financial gain. Beekeepers who want everything published on bees, and who are curious about the things of the hive, will want to peruse the book.

James Allen Nelson, *The Embryology of the Honeybee*. Princeton University Press, 1915, 288 pages and 6 plates. Price \$2.00. If more convenient, this work may be ordered from GLEANINGS at the same price.

## A Correction

MR. F. R. BUCHANAN, of Glendale, Cal., the man who so kindly carried us in his machine up into the skies (see pages 875 and 943) begs leave to make a correction. We stated that he had about forty colonies. As a matter of fact, he has about 200 more in another yard, which fact we now recall, with apologies to Mr. Buchanan.



Dr. C. C. Miller

## STRAY STRAWS

Marengo, Ill.



AT present there's a very carpet of white clover, although there's no telling what the winter may do to it. [It is the same everywhere we have been.—ED.]

IF you find more than one egg in a queen-cell it's a safe guess that laying workers are present. But there are exceptions. June 30 I found in No. 38, which had a laying queen, several cells containing 2 eggs each, and one with 4 eggs. July 26 much the same thing was repeated.

YEARS ago, when I was chorister in Moody's church, Chicago, a visitor sat beside me on the platform in Sunday-school, and quietly told me his business was trying to keep bad things out of the mail. I little thought then that he would do such a great lifework, for he was none other than Anthony Comstock.

A. I. ROOT, what you say about the liquor-traffic and counterfeiters, p. 18, ad. pages, set me to thinking. Suppose a community where counterfeiters abound should ask that a vote should be taken whether counterfeiting should be made legal. You'd scout the idea. Yet here in Marengo, where there are no saloons, the law allows a vote to be taken that may bring in saloons.

"WHO invented the quadruple winter-case?" p. 875. Looks like it might have been invented by more than one, each ignorant of what was done by others. About 30 years ago I saw these cases at Dundee, Ill., at Jesse Oatman's. Some were one-story, for four hives, and some two-story for eight. I have an idea that Oatman invented them, as well as others. [Now who can go Oatman one better?—ED.]

PHILLIPS and Demuth, as quoted p. 878, say, "The ideal toward which the beekeeper should work is to keep his colonies during cold weather absolutely protected from wind." That explains why bees may be wintered outdoors in a still situation 200 miles north of here better than here, where the winds are severe and long continued. [Winter packing is not as important as exclusion from wind. Both are necessary, however.—ED.]

SOMEWHERE about 9 o'clock each weekday morning is a time of special interest, when the daily paper comes. This is Nov. 1, and I can hardly wait for the paper day after tomorrow, for then I'll probably know whether you've downed the saloon in Ohio

or the saloon has downed you—for a while. [We didn't do it; but there is gloom in the liquor camp. They know we have made such big gains that we are sure to win in 1917 if not in 1916. We are going to keep up the fight; and if we make as much gain this year as we did last, we shall make Ohio dry in 1916.—ED.]

MR. EDITOR, you think, p. 879, that a queen just received by mail will be better accepted if her cage be put in center of brood-nest than if stuck in entrance. I wish we might know how that is. I use entrance because easier, but I've had a notion that a queen is more readily accepted there because she has a better chance to become acquainted with the fielders, and the fielders are the ones that raise a racket with a new queen. And I should expect it to work the same with a queen out of the mail as with another. [Possibly you are right. We should like to hear from others.—ED.]

G. M. DOOLITTLE, in addition to the good reasons you give for using full sheets of foundation in sections, p. 886, there's a very important reason that you do not give, although Allen Latham alludes to it, p. 888. If there were no other reason for full sheets, I would use them for the sake of keeping the queen from laying in sections. With starters the bees will build drone-comb, and then if drone-comb is scarce in the brood-chamber the queen is sure to go up unless an excluder prevents. Even with an excluder the bees will sometimes hold the drone-cells open for the queen. [This is a point that has not been sufficiently emphasized. We know it is true from many reports received.—ED.]

THAT case of chilled brood, p. 833. Dr. Phillips leans to the view that in the fall, at close of brood-rearing, bees not only cease to care for eggs the queen lays, but drag out brood that has been reared. Possibly that may account for the supposed chilled brood, and possibly chilling may account for the brood that Dr. Phillips thinks the bees ruthlessly destroy. I rather lean to Editor Root's view, but I've seen things that favor the other view. I wish we knew. [In the case referred to, the dead brood was found only in front of the colonies weakened by foul brood, and in those colonies on which upper stories of wet combs had been placed for the bees to clean up. In this case the colony was made relatively small for the size of the hive.—ED.]

Grace Allen

## THE DIXIE BEE

Nashville, Tenn.



A favorite question for discussion seems to be, "Do bees dislike black?" Well, just ask Uncle Milton, the old darkey who helped me one day recently. And then you might ask him how well blacks like bees.

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Here is winter almost at hand, the long quiet evenings bringing their great opportunity for reading and study—an opportunity of measureless value to beginners, and seldom neglected by more experienced beemen who have found success lying always along the path of progress.

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I am practically convinced that the dead brood I mentioned last month was chilled by that one sudden cold spell. A day or two after I discovered it I tried to show it to Mr. Allen; but the bees had cleaned up so thoroughly that there was little evidence left.

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I believe I like Mr. Auten's watering-device, p. 583, July 15, the best yet, if it just won't prove a breeding-place for mosquitoes. It seems as though there would be scarcely enough movement of the water to prevent the wet sand and the grass, at the spot where the constant drip comes out, from being an ideal breeding-place for these pests. I should like to know how that has worked out in experience, for otherwise it looks like one of the simplest and most satisfactory plans of all.

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Since mid-September our brood-chambers have been decidedly yellow, the top-bars of the frames showing a yellowish tinge, the cappings being a bright yellow. Does goldenrod produce that effect—assuming that they work it? I have never seen it so pronounced before. [Yes, we have seen comb honey produced from goldenrod that was yellow all over—honey, cappings, and section. In GLEANINGS for April, 1909, we showed a picture of some goldenrod

honey that was very yellow, in contrast with ordinary comb honey.—Ed.]

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Though by this time the weather is gray and chill, that threatened early fall did not materialize, October and early November staunchly upholding all the traditions of golden autumn-time. "Fooled again," if I may quote Dr. Miller. And by the way, Dr. Miller, all of us will concede most heartily the inspiring possibilities of a beekeepers' meeting of three when that three happens to be the government entomologist, the editor of GLEANINGS, and the Sage of Marengo himself.

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On page 491 Mr. Holtermann advises beginners to study the correct method of handling frames, and then to do it right. That may seem a little thing, but little

things are very important. Tradition says that Michael Angelo answered a friend's protest over his painstaking attention to details, with the succinct remark, "Trifles make perfection, and perfection is no trifle." If big factories can pay out thousands of dollars to experts to install system and scientific management in their plants, to the profit of both owners and

## DEATH

So many things I do not understand!  
My neighbor's house today is strangely still,  
Insufferably sweet with heaped-up flowers.  
Friends enter softly, greeting hand to hand;  
A silence never-ending seems to fill  
With shadowed hush the long, reluctant hours.

(Though once across the aching air so tense,  
Insistent in his love and ignorance,  
A baby broke the breaking hearts again  
With quivered "When she tummin back? Oh when?")

Beneath a cloud-veiled sky and shaken trees  
My slow steps brought me home, and all around  
The withered leaves lay dead on every hand.  
I stood at last among my quiet bees,  
Stood there and stood, nor made the slightest sound—  
So many things I do not understand!

workmen, mightn't it be worth while for amateur beekeepers to pay out a little thought and attention to study the best ways to do things, and then a little persistence till the best ways become habits?

But I can not sit on that wiggly hive-cover! Not happily. It tires me immeasurably more to balance the unsteady cover than to kneel by the hive, which seems to be my favorite apiarian attitude.

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An interesting letter from Mr. Bruce Anderson, Forsyth County, Agent in the Farmers' Co-operative Demonstration work of North Carolina, reports that the first year's work of the bee-club started in that locality last spring has been very encouraging, with a promising outlook for next year.



Mr. E. G. Carr, bee specialist from Washington, is working in North Carolina at present, and they are planning to hold several demonstrations with his assistance. This year's crop was almost a failure in that state, the average per colony very low, and the quality nothing to boast of. But the beekeepers' ever-saving "next year" looms big with promise, with indications of plenty of white and crimson clover.

Mr. Anderson in his letter backed up Dr. Phillips' statements, page 853, Oct. 15, about the general need of the South by remarking that the industry among farmers in his state is very backward—"the box hive is generally used, with the idea that bees ceased to be profitable many years ago." He adds that instruction is the one thing most needed.

In this connection I want to mention Dr. J. S. Ward's work in Tennessee. Dr. Phillips says it is the duty of a bee-inspector not only to treat bee-diseases but also to give instruction. That is what Dr. Ward is doing in Tennessee. During the summer of 1914, in addition to lectures (and regular inspection work), he accompanied the state agricultural train in its tour of the state, carrying samples of up-to-date supplies, explaining their use, and constantly by talk and printed literature spreading the gospel of modern apiculture.

We are all deeply interested in the matter of wintering, as handled in the government bulletin sketched by the editors, page 876, Nov. 1. If anybody in these parts winters otherwise than in single-walled hives on summer stands I don't happen to know it. That being the prevailing practice does not mean, however, that some other way, yet untried, might not be better. Yet in talking over Dr. Phillips' contention that packing is well worth while anywhere in the United States, Mr. Allen made a point that seems to me logical: As you come south, the profits resulting from winter packing probably continually lessen. If that is so, somewhere on the way you are likely to cross a line below which that profit may become less than the increased expense. Now I wonder just where that line might be. I judge the bulletin shoves it quite out of the country, while the wintering generally practiced throughout the Southeast might suggest that most beekeepers think it coincides with Mason and Dixon's famous line. But such authorities as the authors of this bulletin command the instant and respectful attention of all beekeepers, so we promise ourselves the satisfaction of experimenting with packing-cases down here—perhaps not this winter, as we haven't

yet a very definite idea of how we would handle it; but we are going to get (and study) Dr. Phillips' bulletin on the subject, and various other suggestions, and next winter we may put half the apiary in winter homes, charging the expense against them, and keeping strict account of the final results (dollars and cents results) as compared with the other half wintered the old way. (By the way, the "strict accounts" of this season are not pretty to look at.)

Another interesting question regarding wintering is in the value of supers in comparison to brood-chambers only. Several articles or letters in recent numbers of *GLEANINGS* (for instance, from Mr. Roebeling) page 863, Oct. 15) speak highly of the results from wintering with the supers on. At least one of the most successful beekeepers around here reports excellent results from that system. We are leaving on a few supers ourselves this year. Now Mr. Roebeling says his honey for wintering will be found scattered through the twenty frames. The editor, page 834, same issue, warns against too much hive room. If the supers give more space for the bees to keep warm, but no more honey, would they perhaps be more snug with all the honey packed into the brood-chamber, in just the ten frames? As a general proposition, are twenty frames, with a little honey in each, better than ten nearly full, in the smaller space of a single story? [Ten full frames are better.—Ed.]

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Now I want to ask another question—a hypothetical one, perhaps the lawyers would call it. You have decided you want your hives, with bees and stores, to weigh, we will say, sixty pounds. The first one you weigh pulls the scales to fifty. "Needs ten pounds," you say. Do you mean ten pounds of sealed honey? If so, how many pounds of syrup, two measures of sugar to one of water, will be required to make it?

Two quarts of sugar weigh about  $3\frac{3}{4}$  pounds, and one quart of water about 2 pounds. The two combined make a scant  $2\frac{1}{4}$  quarts of syrup, weighing practically  $5\frac{3}{4}$  pounds (the combined weight of the sugar and water). By simple calculation from these data it is easy to know either the weight or the measure of both sugar and water required to make any desired weight or measure of syrup. But what weight of syrup is required to make a desired weight of "stores"? [We usually figure on 20 lbs. of sealed stores, including combs, as sufficient for northern wintering. Twenty-five or possibly thirty would be better for the South.—Ed.]

# NOTES FROM CANADA

J. L. Byer, Markham, Ontario



By the time this is in print, the Ontario convention will be a thing of the past. We are hoping for a good attendance, and feel quite sure that we shall have a profitable time. These annual meetings serve a good purpose in more than one way; as, aside from the possibility of gaining some useful information, the social side is often too little appreciated. "Man is a social animal," a certain writer has said; and when we meet any one without any semblance of this trait we are at once apt to think him abnormal. In our brushing side by side with one another in convention discussions we are pretty sure to get the conceit knocked out sooner or later.

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As intimated in my last "Notes," the honey market has been good and is still brisk, at least in so far as I can learn locally. My own crop has all been sold for some time, and I have been forced to return money for orders sent me. While I tried to get honey to supply this demand, prices quoted did not warrant the handling, much as I should have liked to fill all orders that came to me. Of course we did not feel like doing the business at a loss, and at the same time I am pleased that all the beekeepers I wrote also seemed to be getting good prices, as the general market is much more important than any little business I might do in handling some of the honey.

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Since Oct. 15 we have had very fine weather here in Ontario, with much less frost than usual at this date. On Nov. 8, and in a sheltered spot, I have just noticed some tender vines still untouched. There should be no excuse this fall in the matter of feeding the bees for winter when such care is necessary, in so far as the weather is concerned, anyway. Our own bees have all been packed for winter for some time now; and during this fine mild weather we have been wondering if it would not have been just as well to postpone this work for a week or two. On the other hand, if weather should have turned out cold and stormy, as it often does at this date, then we should have been sorry bees were not packed.

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Mention is made in an editorial, page 688, that, owing to so much rain, a lot of clover is still in bloom, and this will likely

increase the yield per colony here in Ontario, as given in report the editor quotes from. Yes, we have had more or less clover in bloom; but in our locality, at least, "clover out of season," if I dare use the phrase, never yields much honey. Does it do so in other places as a rule? Some years the bees appear to work on clover quite freely during late August and early September; but I have yet to see any surplus stored from it; but, of course, other places may tell an entirely different story.

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What would be the advantage if a process of filtering dark honey were to become a commercial success (page 829, Oct. 15)? As I see the matter, it would be better to leave things as they are. The dark honey has a place to fill, even if the price is lower than the white; and have we any assurance that the flavor would be changed by this process? If such is not the case, "filtered buckwheat honey" would still be buckwheat honey, even if white in color instead of amber; and such a condition would not be likely to help the sale of either the naturally white or the artificially colored article. There may be some good reasons for desiring to have the dark honeys made white; but as yet they do not seem to be much in evidence. A number of years ago I remember of this plan being mentioned; but so far as I know it did not prove a success. Perhaps the same thing may happen this time, and so comment may as well be postponed till we have something more definite. [See the statement by L. R. Casablanca, on same subject, page 993, this issue.—Ed.]

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The question of aster stores has been much in evidence during the past few years; and after all that has been written on the subject is studied, the matter seems to resolve itself into this: Aster honey in some parts of the country is altogether different from what it is in other sections, whether this fact is attributable to weather conditions, soil, kinds of asters, or what not. As stated on page 829, Oct. 15, that these stores are all right if sealed, we should be inclined to agree, judging by our limited experience; but, on the other hand, well-known authorities from the middle South have written me that in their locality even the sealed combs of honey in strong



colonies will, during cold spells, "weep" and break the cappings, and then the honey sours. Whether this is partly caused by the fact that most beekeepers in these localities give no protection to the bees in the winter is another matter; but I suspect this may have something to do with the question. As a matter of experience I can only repeat that at the Lovering yard, where the bees had little but aster honey for last winter's use, no bad effects showed; and in some queenless colonies that must have perished early in the winter solid combs of this honey were in the hives till early spring, and there were no signs of any of it turning sour, although it was quite thin in body when cells were opened.

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On p. 793, P. C. Chadwick says, "There seems to be a disposition shown to 'knock' yellow bees." As one who has a few times given the goldens none too good a record, I want to hasten to explain that, if "the wish is father to the thought," I certainly would try to do otherwise, as some very close friends of mine happen to be breeding these bees. Goldens may be all right with Mr. Chadwick and others who have them—in fact, I am sure such is the case; but I want to say without fear or favor that, in our own personal experience, we have yet to get the first golden colony that would measure up to the standard of ordinary bees when all things were taken into consideration. The great majority of those I have tried have been very inferior honey-gatherers; and the few that were an exception to this rule were no use whatever in the matter of wintering outdoors. There is not the slightest doubt about it; that all golden bees I have had have been totally unfitted to stand the rigors of our winters when bees are left outside; and this fact alone condemns them for my use, as I practice that method exclusively. I happen to know that the great majority of the producers in Ontario have had a like experience, so it is not to be wondered at that this race of bees comes in for "knocking" in northern localities.

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Any comment I might make on Bulletin No. 695, Washington, D. C., on the subject of outdoor wintering of bees will no doubt be much in line with the fable of the fly and the ox. The fly started to apologize for sitting on the ox's horn, and the latter informed the fly that he didn't even know he was there. But with all due respect for the opinions of the able authors of the work in question, I cannot help thinking that

some of their conclusions are a bit extreme, to say the least.

In regard to the question of stores, and the large mortality caused by said stores being "inadequate," any one who has been at all observant must agree with them fully. The word used is a very fitting one, for it covers the question of quality as well as the amount, even if I have been in the habit of thinking that it was more properly applied to the question of amounts. But to say that "excessive heat production" is such a great factor in causing winter losses appears to me to be "putting the cart before the horse." After all, in plain words it is simply a case of cause and effect. The prolonged cold spells, often accompanied by poor stores in the hive, is the *cause* of all the trouble. The activity, which, in other words, means increased heat production, is the *effect*; so there you are, free to form your own opinion as to whether cold or heat causes the trouble. For my own part I shall continue to believe that cold causes the bees to get dysentery; and when some one in the South proves that heat brought about a like effect, then I shall be ready to change my views.

"The beekeeper cannot apply too much insulating material to a hive" is another statement that many of us chaps in the North will question. The packing at the experiment apiary near Washington, as described in this bulletin, is 3 inches below, 5 inches on ends, 6 inches on sides, and 8 to 12 inches above; and the comment is made that, further north, more would be necessary. Personally I would consider the three-inch packing at the bottom entirely unnecessary, and in many ways a nuisance. Twelve inches of planer-shavings on top is abundant, and I should not want more than 6 inches around sides and ends—in fact, I should prefer less than that at the fronts of hives. Of course the foregoing remarks are only my own personal views; but I fully believe that a moderate amount of insulation along with an abundance of good stores will give results good enough to suit anybody, even in this cold latitude, where we have long winters with sometimes five months without a day warm enough for good bee-flight—at least that has been my experience. One thing the beginner can bank upon is this: Abundance of good stores are necessary; good protection is also necessary, but the stores question is many times more important than all else. This is at least true in our northern sections. Further south, where flights are more frequent, the quality of the stores may not be so important a matter.

# BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado.



Mr. W. B. Moore, of Illinois, has been in the West for five months looking up beekeeping prospects and a location. He wants (and probably will find) a good beekeeping location with good educational facilities for his children.

Mr. D. C. Polhemus, of Lamar, Colorado, our largest operating beekeeper, had almost a complete failure in honey this year; but to hold his honey trade he has already bought two cars of extracted and considerable comb honey. A very neat little story could be told of his persistence in building up his trade to where he has to buy in such quantities. It has been true for several years that his sales have increased more rapidly than his production, and he owns and operates more than two thousand colonies.

## WINTERING BEES.

We have had a very open fall; and up to ten days ago, or well into November, the bees were storing honey from sweet clover.

This is not any too good for the bees, as they will not be able to ripen this honey fully, and it may cause trouble later. Little breeding has been going on except in those colonies with young queens that are not very populous. Most colonies are going into winter in good shape except that they are not up to the average in the number of bees.

## THE HONEY MARKET.

Comb honey has moved in fair shape except in a few cases. There has been a slight slump in prices in some quarters for carload lots, but local orders hold up well in price. There has never been a year when it was so easy to get above \$3.00 a case for the better grades. One or two markets report a large supply on hand, and slow sale on account of the high prices.

Early in November several cars of comb honey were offered in the West at \$2.75 for fancy, \$2.50 for No. 1, and \$2.30 for No. 2, with no acceptances. This honey was packed in single-tier cases, and the freight rate is high from these points.

Extracted honey has been selling well, and, with the advent of cold weather, the trade will become brisk. Sales are made at from five cents a pound up, according to color and quality. White honey brings about 8 cents wholesale.

Sugar is now on the rise, and the way conditions are now, some beemen should be

able to sell honey for the same figure as sugar. Such a time is auspicious for extending the use of honey in cookery.

## HONEY-LABELS.

Beekeepers should by all means use labels on their honey-packages. A neat label is a good advertisement. The label on a glass package should not cover up too much honey, neither should it be so small that it looks only like a sticker. In choosing a label I avoid white, for the reason that it will soil more quickly. A yellow stock of paper is good, or a blue stock with white letters. The words "Pure Honey" should be prominent, and there should be some directions as to the care of honey.

The gummed labels are much to be preferred for glass and I am using them on tin also; but there is some difficulty in making them stick on tin. I have used vinegar and ammonia to wash the can with before applying the label. Ammonia works the best, but is not very agreeable to handle on account of the odor.

Probably the ungummed label for tin is the best, as it is no more difficult to apply the paste than the ammonia to make the gummed label stick.

## EUROPEAN FOUL BROOD.

I have received a letter from Mr. Grover Matthews, of Filer, Idaho, saying that caging the queen has worked better with him than transferring, and that the first outbreak of the disease is the worst, generally. This disease is so variable that the experience of one man may not be the same as that of another. I do not want to speak out too strongly against caging the queens in European-foul-brood colonies; but it has been my observation that transferring and requeening produces results while caging the queens has not. I would not advise any one to temporize with the disease. Generally it works so fast that one is given no chance for temporizing.

Another thing that might be mentioned is this: Do not read everything on European foul brood before you get busy with it if it is in your apiary. A little actual experience mixed with the reading helps wonderfully. Nothing will so confuse one as reading all the contradictory experiences of the beemen printed in the journals. You will not have all their problems in your apiary; and if you try to apply everything you read, European foul brood will likely get the best of you for quite a while.



# CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.



## WHY THE DIFFERENCE?

"The past summer some of my colonies stored nearly twice the amount of honey that others did. Is this usual? Why the difference? If we can discover the reason we might find a remedy."

There are not many observing beekeepers who have not sooner or later noticed that some of their colonies not only stored enough honey for their own use but have given a surplus of from five to fifty pounds, while most of the others in the same apiary did little more than make a living. This condition is more noticeable in poor seasons than in seasons giving a rich flow of nectar. In a good season it has also been noticed that some colonies gave a surplus little less than marvelous in comparison with others, all having access to the same pasturage, and all coming out in the spring in apparently the same condition. I say "apparently," but it is not often that these conditions will hold good to the beginning of the honey harvest, for many colonies will outstrip others in the brood-rearing race during the first month after they commence active operations in the spring.

We are often told to keep all colonies strong, as it is only such colonies that yield a surplus; but this is not always possible, even were it desirable. With the uneven results obtained from the whole apiary, with colonies apparently of equal strength in the spring; combs, hives, and pasturage apparently the same, there must be other factors not easily discovered to cause such unequal yields.

From years of observation I believe that there exists a certain something which we call a "condition," under which a colony will gather the most honey, whether it be extra strong or not up to even an average. If such condition has not yet been reached, or if it has been passed, the storing of surplus will not be so vigorous as it would otherwise be.

What is this condition? The ideal colony must have a perfect queen; be sound in body, in her prime, vigorous, hardy, and prolific, her progeny active and diligent. But such a queen alone will not make an ideal colony. At the right time—that is, when clover, basswood, or fall flowers are in their prime for nectar secretion—there must be the maximum number of field laborers and plenty of empty comb so that

no time or nectar be lost in the secretion of wax and building of a place in which to store it. The ideal colony must swarm at the right time or not at all—that is, so early that the young queen in the parent colony becomes fertile, and the prime swarm has its combs completed during the first quarter of the blooming of the flowers which give us the main flow of nectar of the season.

The ideal colony must not be over-populous too early in the season. A colony is over-populous when the working force is so great a week before the honey harvest begins that the bees contract the swarming fever because the hive is too small in comparison, and the wax-secreting bees too few. Such a condition seems intolerable to the bees, and they try to help themselves by loafing. Their instinct seems to teach them to begin this loafing even before the hive is over-populous. A colony in such a condition will never perform the wonders in gathering nectar that we may expect from one less populous at the very commencement of such nectar flow. The over-populous colony realizes instinctively that its abode will soon be too small, and the swarming fever sets in; and even a novice knows that such a colony is of little value as a honey-gatherer.

The ideal colony is not kept at home during the best nectar-flow by nursing too much brood. If there is too much brood in proportion to the working force, most of the honey will be consumed by the brood. With bees which rear a large amount of brood during the main nectar-flow, or near its close, although they are strong in bees and the queen faultless, the combs will be mostly empty, and will stay so, unless there is to be another nectar-flow of good proportion from ten days to two weeks later.

One of the great points of superiority with the Italian bee is that, when the big harvests of nectar from the clover and basswood come on, the main energy of the bees seems to be bent in the direction of securing the harvest, brood-rearing becoming a secondary consideration. If, through our management, and with a race of bees which will yield to our control, can be found something that will make all colonies give a yield equal to the very best in the past, so that all colonies will come up to the "high-water mark," a great stride will be made.

# GENERAL CORRESPONDENCE

## BIBLICAL REFERENCES TO HONEY

BY W. P. ROOT

The first mention of honey in the Bible is in Genesis 43:11. Jacob sends some to the unknown Egyptian ruler who is afterward revealed as his lost son Joseph. Egypt then, as now, was practically destitute of honey flora, while Palestine abounded in it as well as in countless places in the rocks where bees could find excellent shelter all the year. "A land flowing with milk and honey" is a frequent description of Palestine as recorded in the Bible.

In Exodus 16:31 we find the oldest reference to honey as an integral part of human food. The passage would imply the use of honey as a staple article of food in conjunction with other things.

In Leviticus 2:11 is an injunction against the use of honey in burnt offerings. This arises from the difficulty of burning it in the first place, and also from the disagreeable smoke that would necessarily arise from honey on hot coals. The passage indicates a peculiar regard which the Jews had for honey in connection with religious rites.

In Deuteronomy 8:8 honey is referred to as one of the great staples of the promised land. The same idea is repeated in II. Kings 18:32, but in connection with or relation to Assyria, the blasphemous Rab-Shakeh tempting the Jews to submit to the king of Assyria, saying his country had honey as well as Palestine.

In Deuteronomy 32:13, among the blessings conferred on Jacob as a nation he is said to be caused to suck or derive honey from the rock—a graphic reference to the habits of bees in that respect. John the Baptist doubtless obtained his "wild honey" in the same way, as recorded in Matthew 3:4.

In Judges 14 we find the remarkable account of Samson finding a colony of bees in the desiccated carcass of a lion—an indication of the great number of bees then to be found in Palestine. As Samson had killed the lion but a few days before, it might be deemed an unsuitable place for bees; but as many carnivorous animals and insects abound there, it is no uncommon thing to find a dead animal entirely removed in a few hours, all but the bones. This work would be greatly hastened by the intensely warm and dry air of that climate. Later on at a social gathering Samson chal-

lenges the company to mention anything sweeter than honey.

In I. Samuel we read that Saul's army was distressed by hunger, as he had forbidden his men under penalty of death to eat before sundown. They came to a place where honey was found "on the ground," or, as some might understand it, within easy reach. Jonathan, a son of Saul, not knowing of his father's inhibition on food, stuck a rod in some comb honey, and, eating it, was greatly strengthened and revived. When told of what his father had said, he said he wished they had all eaten of the honey so that they might have punished the Philistines more severely. Later, when Saul insisted on his inhuman order being carried out, the people arose and prevented it. The incident shows the salutary effect of honey, even when eaten in large quantities on an empty stomach, as was doubtless the case with Jonathan.

In II. Samuel 17:29 we read that Shobi, an Ammonite, one of a nation very unfriendly to Israel, with others brought to David, when he was fleeing from his son Absalom, a large quantity of delicacies, among which is mentioned honey. This indicates a more general use of honey than we now witness.

In I. Kings 14:3 we learn that the wife of Jeroboam the king was directed to take with her a cruse of honey when she went to confer with the prophet Ahijah. This would imply that honey was a fit gift even for royalty itself to offer; and the prophets then were held in greater eseteem than kings.

During a great religious revival under Hezekiah, as recorded in II. Chronicles 31, a prodigious quantity of the best of the land was brought to Jerusalem to make a national holiday, and honey is mentioned as being one of the food supplies; and even to this day the Jews make much use of honey in their numerous festivals, all of which are of a religious nature.

In Job 20, Zophar, in replying to Job, says the wicked shall not see the brooks (streams) of honey, this indicating, probably as long ago as the time of Abraham, that honey was a staple article of food.

In Psalm 19 David compares the judgments of God to honey as if that were the highest form of praise for what he consid-



ered delectable. In Psalm 119 the same writer uses the same metaphor in speaking of God's words. Probably honey reminded him of how near it came to costing his friend Jonathan his life.

In Psalm 81:16 David says honey is one of the good things God would have given to the wicked had it not been for their perverseness. Here, again, honey is spoken of as being found in the clefts of the rocks.

In Proverbs 24:13 the writer advises his son (pupil) to "eat honey, for it is good." In chapter 25:16 the same pupil is warned not to overeat honey, but to stop when he has enough. The warning shows the liking the young people had for honey in those ancient times.

In Isaiah 7:15 is a remarkable passage predicting that the Messiah, Christ, would eat honey, which prophecy was fulfilled in Luke 24:42, where Jesus was regaled with honey after his resurrection from the dead.

In Jeremiah 41:8 the treacherous Ishmael is persuaded not to kill ten certain men whom he had captured, as they had treasures of honey and other things hidden in a field. Probably he cared more for their honey than for their lives.

In Ezekiel 3:3 the prophet is commanded to eat a roll of manuscript, which he did—probably figuratively. To give an idea of its agreeable effects he says it was like honey for sweetness. In chapter 16 honey is spoken of as one of the great blessings God had conferred on the rebellious city of Jerusalem. In chapter 27 of the same book, honey is spoken of as being sold to the merchants of Tyre—another indication of the abundance of honey among the Jews.

In Matthew and Mark honey is said to have been a part of the food of John the Baptist.

In Revelation 10:9 John was commanded to eat the book. This was bitter in taste, but as sweet as honey afterward. This was possibly in vision as in the case of Ezekiel.

In several places in Proverbs honey is spoken of as a standard of sweetness. Where honey-comb is spoken of in the Bible as being eaten, we should always understand comb honey; but the Hebrew word "dabash" indicates what we used to call strained honey, the same word being called "debs" by the Arabs of today when speaking of crushed comb honey.

Medina, Ohio.

## ONE WOMAN'S WAY OF LIFTING SUPERS

BY FLORA M'INTYRE

Grace Allen is puzzled over the lifting problem. My mother does considerable work alone in the apiary, and she manages the lifting of heavy supers thus: Carrying along an empty super when she goes into the apiary, she places it on the ground at the back of the hive to be opened. After prying the super free and applying a little smoke she half slides, half swings the super along on the empty one in the rear. When she is ready to close the hive she swings the super back on to the brood-chamber in the same manner. In this way the heavy super does not have to be lifted or lowered from the level at which it rests, and that eliminates what is usually the very hardest part of the lift. Not long ago my mother wished to put a super

of empty combs under one that was full of honey. She lifted the full one off in the manner described, and found that it was very heavy. After putting on the super filled with empty combs the problem was



Swing the heavy super on to the empty one.

how to raise the heavy one up to the third-story level. It seemed about impossible until the inspiration came to place an empty super on top of the hive and transfer the heavy combs one by one. This method is slow, but perhaps not as much so as waiting for some one to come and help. It could be used in moving the second story if necessary; but the mother is small, and not at all muscular, and she has found that an empty super to swing it on to is all that is

needed. However, she says that, if she were starting in business with a new equipment she would try the shallow supers because of the greater ease in handling, and in spite of the fact that the brood and super combs would not be interchangeable.

Ventura, Cal.

[The plan here outlined is perfectly feasible, as we have tried it on numerous occasions.—Ed.]

## BEE-NOTES FROM HOLLAND; OUR BEEKEEPERS' ASSOCIATION

BY J. H. J. HAMELBERG

We have only one association of beekeepers in this country. Considering, however, that the whole of Holland has only about six million inhabitants, this one association may be said to be all that is wanted. At the beginning of this year it counted 6574 members (which means one member to every 100 inhabitants), divided over 121 districts, each of which has at least 25 members. Each district has its own officers, and can make its own by-laws and regulations when these do not conflict with the statutes of the association or with the resolutions of the annual conventions.

The yearly contributions of the members is one guilder (40 cents), each district having control over the contributions of its members, under the obligation, however, of holding three-fifths of these at the disposal of the General Board of Directors. Persons wishing to become members, but not desiring to reside under the district board of their places of residence, can do so; but the contribution is then doubled. Voting for membership is not required. To become a member one has only to send in his name.

Every year, in April, a general meeting of the members takes place. Each district can send a delegate to this annual convention, who then represents the entire district, and has to vote in accordance with the opinions expressed by a meeting of the district members, previously held, or according to the instructions the district board may have given him. He may bring out one vote for every twenty-five members of his district, but is never entitled to more than six votes. Once a district is represented by a delegate, its other members, although having the right to assist in the meeting, and there have their say, are not entitled to vote, neither have the members not belonging to any district such right (which seems rather hard on them).

It is to be regretted that this annual convention lasts only one day. The reading of

the yearly report of the secretary, the discussions about the budget, the election of commissions, and other official business, take up so much of the meeting's time that there hardly remains an opportunity for the discussion of the pros and contras of different matters recently brought forward in bee-management, nor for the exchange of experiences of the practical beekeepers present at the meeting.

As evening approaches, one may notice every now and then a member or district delegate who has to catch the last train to reach home that night, leave the assembly, and, as a rule, the latter part of the program has to be hurried through. No wonder that, except the district delegates, so very few members assist in these annual conventions where they seldom hear anything of practical use to them.

This year two papers were read at the convention, one treating on the rights on stray swarms, the other discussing the desirability of introducing a species of red clover accessible to bees, and of the same value for feeding purposes as the red clovers cultivated in this country. Both lecturers proved to be well posted in the matters treated by them; but their practical value to an audience of beekeepers seems rather doubtful. We have no legislation on the rights of ownership of stray swarms, and it is, in fact, of little value to the practical beekeeper to hear what should be, but what is not. And as for the desired species of red clover (the benefits of which will hardly need to be demonstrated to beekeepers) this is a subject for the researches of our agricultural experiment stations, while the introduction of such a species, whenever found, would surely be in better hands by the farmer than by the beekeeper.

Although one can appreciate the attempt of the General Board of Directors to make the annual conventions more attractive to the members, it cannot be doubted that such





Apiary of W. van Os, Leerseem, Holland. Mr. van Os is secretary of the Holland Association of Beekeepers.

purpose would be realized sooner by giving the members an opportunity of hearing at these conventions something of practical value to them than by asking them to listen to the reading of treatises, however learned and thorough, on subjects like those treated this year—the one being more appropriate in a meeting of jurists and legislators, the other being a matter to be submitted to our Agricultural Department. Once the conviction gained ground with our beekeepers, especially with the “small fry” among them (who are most in want of instruction), that their attending the conventions would lead to their better knowledge of profitable beekeeping, the meetings would surely be better attended, and our practical beemen would not consider having done their duty by delegating one of their district members to these conventions. And as will be shown in following articles, it cannot be said that our beekeepers are not in want of some better ideas about modern beekeeping.

The association issues a monthly periodical, usually containing twenty pages of reading matter in small octavo. It contains the official communications of the General Board of Directors and of the district boards, articles by the editor and of the members, and, occasionally, extracts from *GLEANINGS* and other foreign bee-papers. There can be no question that the editor tries his best to give his readers something in good style and form; but he is rather handicapped by the small amount (\$800 a

year) put at his disposal for the paper, the printing, and the gratis distribution of the periodical among the members. Considering his salary of \$100 a year, the editor's work cannot be considered otherwise than one of love; and to expect more of him would simply be presumptuous.

For many years the association has been presided over by G. Baron de Senarels de Grancy, a courteous aristocrat of the old French school, and at the same time an influential man who felt warmly for beekeeping and beekeepers. Advanced age and want of time obliged him last year to request not to be re-elected, and, although with great regret, the annual convention had to respect this desire. During his long term of presidency, the association has brought about some very good measures; *e. g.*, a government grant for the appointment and salary of an official to instruct and advise our beekeepers by visiting their apiaries and by holding lectures all over the country. I don't doubt that Mr. van Giersbergen, who holds this position at present, and who, we beekeepers hope, will be continued in it for many years to come, will often meet with the same distrust our first professors in agriculture met with on the part of such people as believe practice to be all and science nothing. It is manifest, however, that this want of confidence is gradually disappearing, and it has often been demonstrated how his lectures take.

Another good thing obtained during the presidency of Baron de Grancy has been the freedom of duties on sugar (which are high in this country) used for feeding up bees for wintering. Before distribution among beekeepers this sugar is mixed with some ingredients to unfit it for housekeeping purposes, usually with "paprika" (red pepper, ground very fine). Besides, every beekeeper is entitled to only a certain quantity per colony (usually fixed at 16½ pounds), and our customhouse officers have the right to visit all apiaries to ascertain that not more sugar is applied for than the amount to which the owners are entitled. This adulteration does not seem to injure the bees. They take up the syrup readily and winter well on it. Until recently only white granulated beet-root sugar had been distributed; but last year the General Board of Directors decided to purchase unrefined sugar, which has not been a success, and won't be repeated. It seems to have been done for economy's sake, the sugar having gone up in price considerably on account of the war. But, as I have been told, some beekeepers have, unfortunately, suffered severely on account of this economy.

Our association has also introduced a diploma for beekeepers. Any one desiring to obtain it has to pass an examination before a commission appointed by the General Board of Directors, and of which the bee-expert, before mentioned, always is a member, the other members being chosen among well-known beekeepers and officers of the association. The institution, however, does not seem to be very popular, as very few practical beekeepers submit themselves to this examination. Neither is this to be wondered at. One may be thoroughly well acquainted with the methods of profitable beekeeping without being able to expound the anatomy of bees and flowers, or without knowing the construction of different makes of hives, as is asked by the examiners. The practical demonstration that candidates have to give of their ability to handle bees is necessarily limited for want of time, only two hours being put aside for it.

When wanting help, most beekeepers will rather judge a man's ability after having had him at work for a day than by his holding the association's diploma. Still, the possession of it proves the holder not to be a stranger to bees. As such it has some value; and the fact of its existence will help to convince the outsider that there is something more in beekeeping than putting down a hive in spring and gathering the honey in autumn. And it does not appear

superfluous to combat this idea, for even our government seems to hold it.

We have government experiment stations galore for the promotion of the interests of the farmer and stock-breeder; but in the matters of beekeeping and poultry-keeping, very little is done by our government, which mainly contents itself by giving a grant to our beekeepers' and poultry-keepers' associations. Having done this, it seems to think that it can leave the development of these two branches of agriculture to private and individual initiative. It has not awakened out of its lethargy I mentioned seven years ago, and, as yet, it does not seem to have the least idea of the scientific problems attached to the full development of beekeeping and poultry-keeping; for if it had, it surely would not believe that the solution of these problems will ever be reached by giving the respective associations grants of between \$1000 and \$2000 a year, which amounts would not constitute even a reasonable salary for one scientist to devote his time and knowledge to these problems, not to speak of the cost of buildings, grounds, and other supplies indispensable for thorough scientific researches.

It must be said that the association with its limited means does what it can do in this matter. A few observation stations have been erected, the managers of which regularly send in the data of the temperature and rainfall at their apiaries, and of the increase or decrease in weight of their colonies, which data are published in the monthly periodical of the association. Valuable as these observations may be, they won't bring us much nearer to rousing our government into action.

For this reason it was very wise on the part of one of our members to move at our last convention that the General Board of Directors take the initiative for the erection of an experiment station for the promotion of beekeeping, and the board has already taken steps in this direction. But at the same time it would be but right, I think, for our beekeepers to point out their interests to their representatives in Parliament, and refuse their support to such candidates for election as are not prepared to further these interests. At present, hardly a voice is ever raised in our House of Commons for the promotion of the interests of beekeeping and poultry-keeping.

But this state of things would surely become otherwise if all beekeepers and all poultry-keepers in the country would club together and give their support to only such men as are well convinced of the absolute



necessity of improvement of the present conditions by the government.

Last, but not least, the association tries to come to a more uniform packing and grading of honey, and to a better co-operation among beekeepers in the matter of disposing of their crops and the purchase of their supplies. To further this purpose, a chamber of commerce (as it is called) has been instituted; but whether or not it will prove a success remains to be seen. The

interests of many beekeepers would certainly be greatly advanced by a general office, as instituted. But opposition from the trade is surely to be reckoned on, and the great difficulty will always be to find the right man to head such an office, while it won't prove such an easy matter either, to convince the smaller fry that co-operation in these matters must necessarily result to their profit.

Soest, Holland.

## ANOTHER WAY TO GET A START

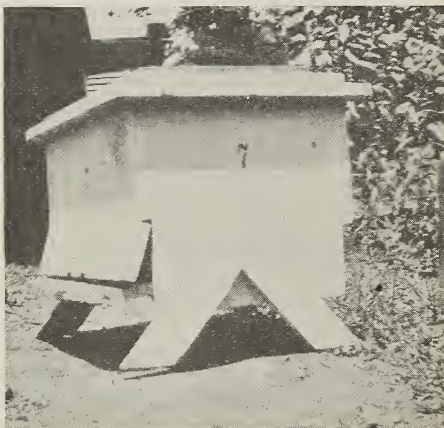
BY DR. G. R. RICHARDSON

In the fall of 1912 I happened to remember an old-time beekeeper who had died several years before, and I wondered if there were any of his old hives still left. I investigated, and found that out of an original 700 there were 240 still holding together.

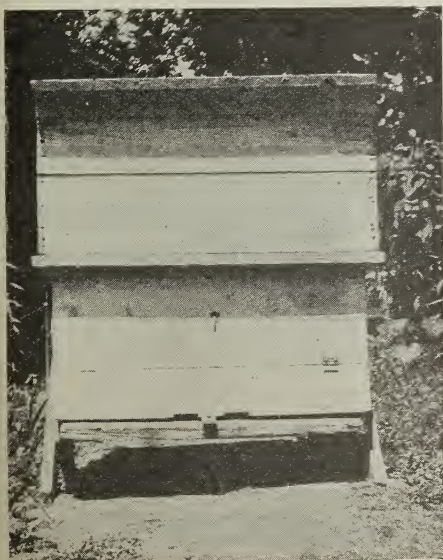
I interviewed the widow, and she asked 20 cents apiece for them just as they were. I finally offered her \$25.00 for the lot for kindling-wood; and after properly demurring she accepted my offer, and I am sure that she at the same time smiled in her sleeve. I did not at that time tell my wife how much I really did pay for them, nor did I tell her that it cost me a dollar a load for ten platform hayrack loads to have them hauled a mile. The teamster agreeing to take a load of broken covers for one of

the dollars somewhat quieted my conscience, and I started in to clean up the immense pile of hives. By the next spring I had them sufficiently cleared away to be able to find the barn, and furthermore had sold the old worm-eaten combs for \$10.00.

These hives (Fig. 1) were 26 inches long, 16 deep, and 41 from the ground to the



Each hive rested on four legs.



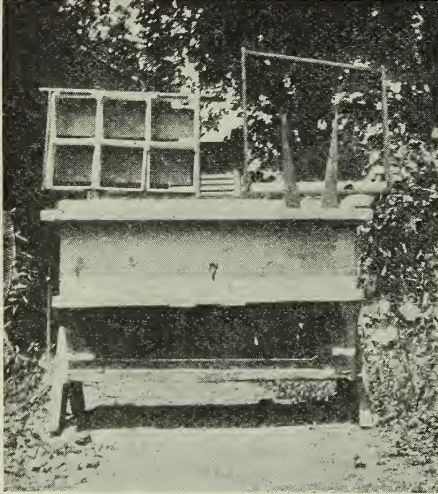
The hives were each over twenty-six inches long.

middle of the cover when the super was on. Each hive stood on four legs nailed to the ends of the brood-chamber, which was 18 inches high in front and 12 in the back, and held 14 frames, with the bottom-board nailed on, and sloping from back to front (so that the worms would fall off the combs and roll out the entrance!) which extended clear across the front, and was hinged so it could be opened fully three inches.

The frames (see illustration) had thirteen inch top-bars with a three-cornered piece to fasten the foundation on, and with closed ends. The bottom-bar was at an angle to follow the bottom-board, and rested on a

cleat at the front; and the back lower corner rested on the bottom-board. Two follower boards were used, one in each end, and they were held in place with two wedges to each board.

The bee-space between the top-bar of the brood-frames and the bottom-bar of the section-holders was all the way from an inch to two inches, according to whether they



The bottom-bars of the frames were at an angle to follow the bottom-board.

stayed on the cleat or dropped off. And the supers—such supers! Twenty-seven inches from end to end, 12 inches from top to bottom, and 18 from front to back, with 12 section-holders, each of which would hold six sections. I know that they would hold the sections, because I tried to get some of the old ones out. Each had two three-inch strips of tin nailed on one side, presumably for separators; but I may have been mistaken as to their use. It may have been to keep the sections from coming out; and if that was what they were for they were a grand success. I do not wonder that this old-time beekeeper was of an irascible nature.

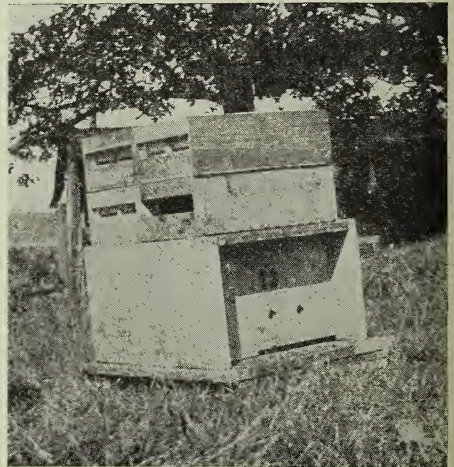
The lumber in these old hives was soft white pine, light in weight, a full inch in thickness, straight-grained, and all nailed with cut nails, mostly ten-penny casing. Just imagine pieces of pine 24 x 26 inches without a knot, and so soft that a ten-penny nail would not split one when driven half an inch from the end! I certainly did get my \$25.00 worth in working them over during the winter evenings in my shop in the furnace-room. I made fifty good hives

of another and better pattern, of which I have never seen a description in any book or paper, although it may have been described before my time. It was not an invention of mine, but of a very successful beekeeper of my acquaintance. With his permission I should like to tell about the hive at a later date, as it embodies some features that I think excellent, especially in the super. This has no T tins nor other support, but is so made that the frames are self-supporting.

Besides these fifty hives that I could not buy for less than \$4.00 apiece, I have kindling enough to last several years, all cut and resined, and have so far sold nineteen old hives, just as I got them, for a dollar apiece, and have four more yet to sell.

With the best of the lumber that was left after building my fifty hives I then built a house, or shack, ten by twenty, with a porch of the same dimensions, in which I live with my family of four during the summer.

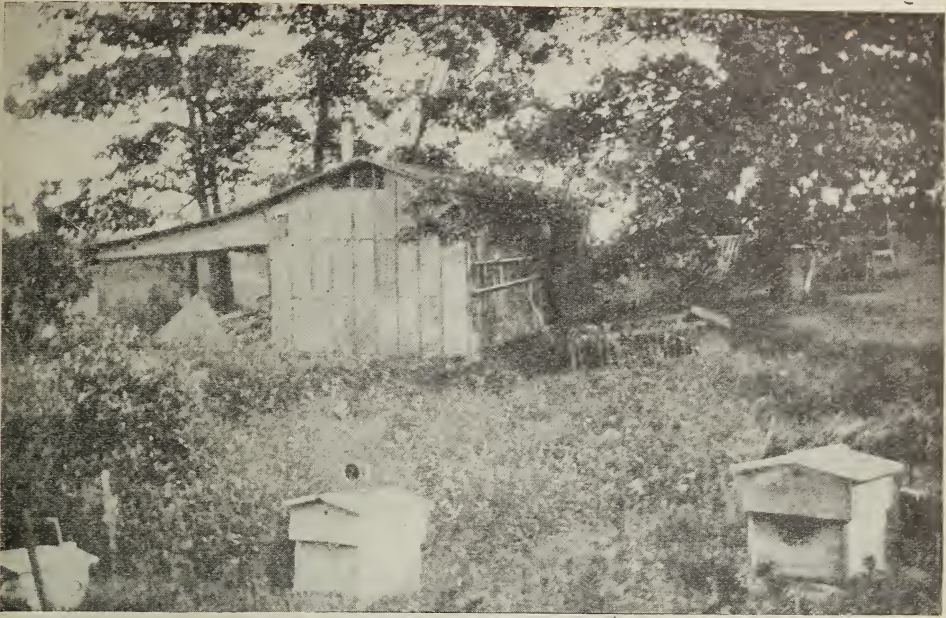
I did not buy a stick of lumber, not even a two-by-four which I also made by nailing pieces 26 x 11 together, breaking joints, and then ripping. These gave me two-by-fives that I used for joist and studding.



In the new hive the super is so made that the frames are self-supporting.

The roof and sides are made by nailing the end boards and follower boards, which are 12 x 14 (of which I had over a thousand) to strips of the 26-inch pieces, and then to the studding. The roof is sheathed with these small pieces, and then covered with regular roofing-paper, which is painted with powder paint. The cost of the





With what was left I built a summer cottage for my family.

whole building did not exceed \$20.00, the largest part of which was for the roofing. Even the nails were, for the most part, the old nails, of which I picked up and straightened out over 67 pounds. I did the work all myself with the help of a friend who is also a little-red-hatchet carpenter, and did not lose a single day from the office.

The shack is located on a hill overlooking a beautiful valley, fifteen minutes from town on the interurban line, and is surrounded by fine oak-trees of several species; and, besides being a delightful place to spend the summer, it is a good location for bees. We have plenty of white clover some years, acres of sweet clover every year; willow, some basswood, dandelion by the acre, and plenty of catnip. Hound's-tongue (*Cynoglossum officinale*) is simply taking the pastures in this section. My wife is my partner; and what I do not think of she certainly does; and when I become discouraged she enthuses, and *vice versa*.

The first year we started with two colonies of bees. One of them we moved from town, and the other was a swarm from a neighboring farm. Something happened to the queen we took from town, and the other colony we evidently managed to death—any way, we started over again the next spring, this time with two queens and two half-pounds of bees. One of these queens went the way of the first, and we bought another,

which we succeeded in introducing successfully. The next spring we again started all over again, this time with two full colonies, which we tried to divide by removing the queens and waiting for queen-cells. One queen we killed outright while trying to clip, and the other took a swarm out while we were looking over the frames. They did not even take time to settle, but evidently knew where they were going, as we chased them nearly a mile through the fields without finding them.

We succeeded in making them queenless, and then some, as there were no eggs in either hive. After waiting in vain for queen-cells we bought six virgins which we introduced. We were successful with four, and in the mean time caught a fine swarm in a decoy hive. So we now have the best start that we have ever had, and are once more enthusiastic. We have learned a few things about bees in our three years' experience, and comfort ourselves with the thought of Dr. Miller's eleven years at beekeeping with only two colonies to show for it. We think that we may yet win out.

We certainly have the love of the pursuit all right, and are long on theory but short on experience. We are acquainted with them all, from Dr. Miller to Doolittle, and from Miss Emma Wilson to Frank C. Pellett—also Dr. Bonney.

Princeton, Ill.

## A NEBRASKAN'S HONEY-HOUSE

BY LOUIS MACEY

When I first began keeping bees I used a spare upstairs room in the house to store the honey and odds of equipment, together with such supplies as would be damaged by the weather. I also used the kitchen as a workshop for putting up sections and repairing hives; and as honey tasted mighty good those days, the "missus" was very indulgent of the "muss;" but when it came to scraping sections (even with plenty of papers spread around), that was a different kind of "muss." As I got close to 70 or 75 colonies, and the taste of honey grew old, and the stored honey and junk overflowed into the attic over the shed room and filled it up, I saw I had to have a special building.

As I had done well with my bees, liked the work, and felt that I was in for keeps, and as I also gained some experience of what a mouse can do in the way of damage, I decided on cement. We made the blocks ourselves, using a fifteen-dollar mail-order - house machine, and a rich mixture of one part cement to  $4\frac{1}{2}$  parts of river sand and gravel.

Let me say there is a big difference in concrete, and especially in concrete blocks. Turning the mixture over two or three times with a shovel is not mixing as concrete should be mixed. We have found that, by slinging and scattering each shovelful we could make the dry mix quite uniform by four times over, no less.

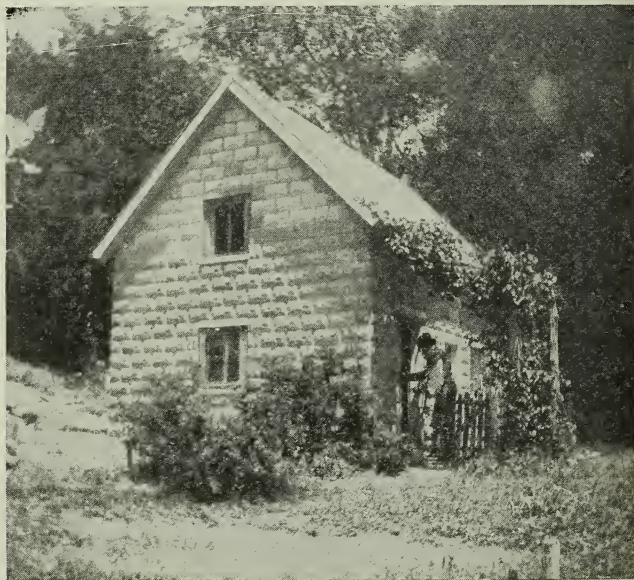
We made only about 100 blocks a day; but they were all thoroughly tamped. A fellow came by who boasted that he had made 200 a day, right along, and done his own mixing. We let him show us how quickly he could make one. He certainly did not take one-third the time we did, and the block looked all right; but an hour after he was gone I tried the blocks with my finger. Ours were firm and solid; but in the one he made I could easily make dents a quarter of an

inch without causing any bulge around them. It is porous blocks of this kind, barely hanging together, that let so much water through and stay wet so long. It certainly is a mistake to build a permanent structure out of a lean mixture, half mixed and half tamped. It pays to do it right.

The house we put up is 16 x 20 ft.,  $11\frac{1}{2}$ -story. The lower floor is cement, with a very hard smooth finish, and there is also a cemented pit, 6 x 6 and 3 feet deep, in one corner, so we can set a can under the extractor.

There is a deck above this pit, which is 3 feet lower than the main upper floor, and serves as a landing for the turn of the stairs.

We used a total of 106 sacks of cement, costing us here \$68.90; and the rest of the



The house cost \$121.60, not including our own labor.

material—lumber, door, windows, shingles, hardware, etc., came to \$52.70, or a total of \$121.60 for the house as it stands, not including our labor, of which I kept no account. We did all the work ourselves, mostly at odd times. It is as near dust-proof as we could make it, the plates and end rafters being cemented on, and paper laid under the shingles.

There is just one thing to be desired: It is hard work lugging the honey up out of



the pit around up the stairs. I shall soon have to have a larger extractor, and should like a honey-pump and a big tank upstairs with a pipe and faucet to draw off from below; and here's the problem: Contrary to Mr. Wilder, our early-gathered sweet-clover honey granulates (if anything) worse than the late-gathered crop. The first is generally granulated solid before I finish the last.

If I let it go till I get a "big tank" full I shall certainly have to heat it some way.

I have thought of a steam coil or a double tank with space for circulating hot water between, but these would be expensive, and even then would not clear the draw-off pipe.

I shall appreciate any suggestions from those who have had experience in this line. "I've got to do sumpun."

North Platte, Neb.

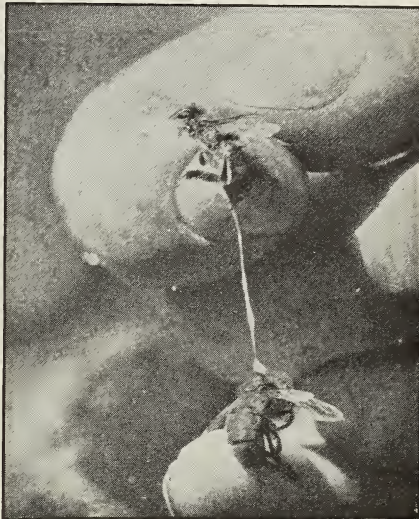
## BEE STINGING BEE LOSES STING

BY C. E. BARTHOLOMEW

This photograph will no doubt settle all controversy as to whether a bee loses its sting when used against another bee. While the writer, in company with Mr. Frank C. Pellett, State Bee Inspector of Iowa, was visiting the apiary of Mr. Tinsley, of Ames, Iowa, a swarm was observed leaving the hive. The three of us placed ourselves in front of the hive near the entrance to observe if possible the queen as she left the hive to go with the swarm. She came out on the alighting-board, but, frightened by our presence, no doubt, returned to the hive.

The swarm, not being accompanied by the queen, began returning; but before we had noticed the movement many of the bees, probably because we were standing there, began entering two adjacent hives. A small war ensued in which many of the bees lost their lives. A large number of the dead bees contained the sting of their opponents; and as Mr. Pellett had his camera with him we fortunately obtained this photograph.

Ames, Iowa.



Many of the dead bees contained the sting of their opponents.

## THE NEW EXTRACTING APPARATUS

BY R. F. HOLTERMANN

We have had another season's experience with the twelve-frame honey-extractor, the honey-pump, the steam-heated honey-knife, and the wire-cloth bee-escape board.

Last year we had a very poor honey crop; but this year the crop was good enough to give everything a fair test. I am thoroughly satisfied with all. The steam-heated knives are a great help in uncapping. We have not lifted a pound of honey into our six-foot-high honey-tanks, and the twelve-frame honey-extractors with their friction pulleys are doing their work quickly and well. My son Glen removes a portion of the honey in one side of the comb, then reverses the reel and cleans that side,

turning again and emptying the first side. The saving resulting from thorough extracting is no small item. So much for the inside work.

### OUTSIDE.

When it comes to the outside the wire-cloth bee-escape board has simply revolutionized the work here. We carry one bee-brush for cases where there is brood in the supers; and this year in extracting four apiaries we came across one case where there was no brood in the super, and yet the bees did not pass out of it. These wire-cloth bee-escape boards are an unqualified success, and I say this without a moment's hesitation, knowing that there have been

some adverse reports. They will work wherever the solid bee-escape board will work. In speaking with Mr. James Armstrong, Cheapside, recently, a man who is well and favorably known as thorough in what he does, he said, "One must remember that, unless the bees are doing some work, they may remain contented in the super, and the escape be of no avail." People who report

unfavorably on these escape-boards have certainly not been thorough in their work or are not conversant with the conditions under which bee-escape boards work, or else the bee-escapes themselves are not made right. This might easily be the case. If that were true, they would not work on any other board.

Brantford, Canada.

## FEEDING SUGAR TO INDUCE QUEENS TO LAY LATE IN THE FALL

BY G. T. WHITTEN

By feeding two or three tablespoonfuls of sugar syrup or cheap honey a day to a colony after the honey-flow is over, or between the main and fall flow, I have found that the queen will continue to lay until late in the fall. This will keep the hive full of young bees at all times so they will be able to cover a large amount of brood and save it all. Double-walled hives should be used if possible. If single-walled hives are used they must be packed early.

A queen at any time of the year will regulate her laying to correspond with the amount of food which comes in. The amount of stores already in the hive has little if any effect on the queen's laying. I found that the egg-production depended on this in-coming food. This feeding should be regular, steady, and in small quantities, rather than in large quantities at one time.

I discovered that, by careful study of general conditions concerning the honey-flows, I could have all colonies strong at the right time. To have them well supplied with young bees late in fall gives strong colonies in spring.

When feeding bees in early spring or late fall, care must be taken, because they use up the food as soon as it is given them. Becoming excited they rush out to seek more food. It is often too cold for them to

return, hence the danger is great in thus feeding, because many bees are lost. I close the entrance of the hive with a wire screen until the bees have settled down again.

The best way to do this feeding is to cover the top of the hive with a wire screen, then place an empty super on the hive, and feed over the cluster.

Take a glass jelly-tumbler. Punch four or five very small holes in the metal cover, and invert it over the frames on top of the screen. The cover of the hive may be removed, and the food may be placed in the super at any time without disturbing the bees or attracting robbers. After many experiments I have found this to be the safest and best method of stimulative feeding. If this method is followed carefully, each colony should be in condition to divide in spring early enough to build up to two, at least, for the honey-flow when it comes.

After a careful examination in the spring, those that are not building up in a satisfactory manner should be fed as suggested in this article.

Each colony should have not only sufficient stores of food for the winter, but "some more," for one cannot have too much food therein. The bees use the surplus to good advantage in the spring.

Hartford, Ct.

## APPLES, CHERRIES, PEACHES, AND BEES

BY C. A. OLDMAN

My apiary of 56 colonies is situated in a rather ideal spot, being located on the end of a 16½-acre farm owned by my brother. He has 8½ acres in orchard, consisting of 775 apple, 175 cherry, and 50 peach trees.

The board fence shelters the northwest side, fir-trees the north, and a high hill (from which the photograph was taken) about 150 yards from the hives shelters the east side. The south side is somewhat ex-

posed; but I have planted a hedge of flowering currants to provide shelter from this quarter.

This location is about three-quarters of a mile from my home, and I moved my apiary here at my brother's request. He wanted my bees to fertilize his fruit-bloom, and I wanted his fruit-bloom honey. Although, occasionally, when my brother is cultivating his farm near the bees, and my





A New Zealand apiary in an ideal spot.

hybrids get too fond of him, the air gets a bit blue, yet we are both well satisfied with the arrangement.

My hives are arranged in groups of four (similar to the plan in the A B C, but omitting the center hive. I prefer this arrangement to many others I have tried. The photograph was taken with the orchard for its objective; and, being taken from the end of the rows, it does not show the apiary to the best advantage.

My honey-house is 10 x 10 ft., made of corrugated iron, and is used only for extracting. All combs, honey, etc., are taken home after extracting. On the left a portion of my vegetable-garden is shown, and

a creek runs right around the garden and in front of the apiary, but does not show in the picture. Between the apiary and the hill from which the photograph was taken there is about three acres of lucerne (sweet clover); just past the board fence is a crop of partridge peas; next mangolds; then oats in stack, and then the apple-orchard, with the peach-trees up next the house, and the cherry-orchard on the left side of the house. Another orchard of about three acres adjoins my brother's on the left of his cherries.

In the background are the Waiau River and distant mountains.

Waiau, N. Z.

## EUROPEAN FOUL BROOD NOT FORMIDABLE TO THE EFFICIENT

BY J. E. CRANE

Mr. R. F. Holtermann says that for years he has promised that when European foul brood struck his bees he would throw up the sponge and walk out, leaving the outfit behind him. Well, if I am not surprised! One of our most prominent beekeepers ready to haul down his flag and run! He says further he may do it yet. I hope not. Most

of our troubles seem greater at a distance than close at hand, and this is most certainly true of European foul brood.

The shiftless beekeeper may well regard this disease as a serious matter, if not an actual calamity, for it is almost sure to wipe out his "bee-ness" before he knows what is the matter; but for Mr. Holtermann

to run is unthinkable. Leave that for the careless.

I called on one such this very week. He had twenty-five colonies left, but I would not give a cent apiece for them to keep. The wax-worms had already destroyed the combs in a large number, and those left were fast reaching the stage when the worms will come into full possession. I advised him to treat the whole to the fumes of burning sulphur, strain out the honey in the old-fashioned way, and make the rest into beeswax.

There are others who have no trouble, although this disease is on every side of them. One extensive beekeeper even told me that it was a blessing in disguise, as it cleans out the small slipshod beekeepers and leaves the field all to himself.

If we are to fight this disease we must know its strong points as well as its weak ones, that we may fight intelligently. To begin with, European and American foul brood are as distinct from each other as two diseases well can be. I have had a better opportunity to study European foul brood this season than ever before. I find one of the most striking differences in the two diseases is in the rapidity with which it spreads. American foul brood may be in a hive for years, and yet the colony do a fair business, while with European foul brood it very quickly runs down. Not only does a colony run down quickly, but it spreads from hive to hive with great rapidity; hence the necessity that the beekeeper, where this disease exists, be able to recognize it at once and apply the remedy. If the colony is small it should, if badly infected, be broken up or disturbed at once. If of fair strength the queen should be removed, which will stop the spread of the disease in the hive, and after two or three weeks a

young Italian queen introduced, or a virgin in a week or ten days.

Some time in June I called on a lad, perhaps thirteen years of age, who had the care of ten or twelve hives. I found two of them had European foul brood. I gave him the above directions, and when I called on him in August these colonies were as vigorous and healthy as one would care to see. I have seen other colonies this season clean up in the same way.

Now, here is a very curious thing: If we were to take a colony with American foul brood and cut out every cell of diseased brood it would be about as sure to come down again with disease as it is to live. That has been my experience, while with the other disease the hive may be half full of honey. If you give the bees a chance they will clean up and remain free from disease, with a new vigorous queen, provided the colony is of sufficient strength.

I am inclined to doubt Mr. Holtermann's theory that bees from diseased colonies carry the disease germs to flowers, and these bees from healthy colonies take the germs to their own hives, although I have no way to prove he is wrong. The past season a number of colonies were brought from a yard where there was some European foul brood last year. Several of these came down during the spring with European foul brood, and the disease spread in this home yard; but in nearly every case it spread to those nearest the diseased colony. Now, if the disease had spread by way of the flowers it would be as likely to appear in hives furthest from the ones that were diseased as those nearest; so I have come to think that the disease spreads largely or often by bees drifting from a diseased colony and entering, by mistake, a healthy hive.

Middlebury, Vt.

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## THE CURIOUS SEASON IN CENTRAL WISCONSIN

BY E. E. COLIEN

The beekeepers of central Wisconsin rejoice because of the realization of a bountiful crop of honey this past season, and the very promising prospect for another good harvest the coming year. The season just closed was most emphatically one replete with quick and striking changes of weather conditions that brought hope and almost despair in quick succession.

The heavy fruit-bloom of this section presaging a fine start in brood-rearing was cut short by a long spell of cool cloudy weather and heavy rains. This long-con-

tinued cool moist weather, however, started up the white clover, and oceans of bloom raised the beekeepers' spirits. But the spread of beautiful white had no nectar in it with its first appearance, when, presto! almost in the twinkling of an eye, with the coming of a spell of normal warm weather the floral kingdom seemed suddenly, as if by magic, filled with sweets. One of Wisconsin's best honey harvests was on.

The beekeeper who was ready, and supplied his colonies with supers, surely had "no kick coming" on account of a short





A. J. Knox's apiary in winter quarters. See page 905, Nov. 1.

crop this year. I took off over a ton of choice white-clover comb honey from forty colonies of bees, spring count, besides securing thirty colonies of increase.

Basswood, strange to say, had absolutely no nectar in its bloom here this year. But white clover, alsike, and sweet clover made up the deficiency. White clover was everywhere in evidence the entire summer, the bloom continuing all through September.

Besides a bountiful crop of surplus, the late clover bloom and other nectar-filled flora, coupled with desirable nectar-gathering weather, enabled the bees to fill the hives to their capacity with the best of wintering stores.

The late warm seasonable rains have put white clover in the best possible condition for wintering.

Manawa, Wis.

## HOW FAR DO BEES FLY?

BY F. M. BALDWIN

This much-mooted question is often discussed by Mr. Clute and the writer. We are inclined to believe that the distance a bee will work from the hive is over-estimated. We were much interested by the light Mr. Clute's observations threw on the Florida bee. In other climes the bee may travel further afield; but down here she is not much given to long flights. But before I set down the observations let me say that it is not wise to deduce from this anything as to what bees will or will not do in other sections. These observations give light, if at all, on the Florida bee alone.

Reference was made above to the thirty colonies that stored mint honey. They are in the midst of square miles of mint, and seem to care only for mint. Less than a mile north of them is a vast stretch of smartweed. It comes in after mint is out

of bloom. A flight of less than a mile would have put this yard to work on it, but no trace of that nectar is in the supers.

The fields of mint run south from this yard nearly three miles, and then give place to a vast area of smartweed. Three-fourths of a mile inside the line where this last plant begins and the mint ends is yard No. 2 of 142 hives. Here the supers were filled with smartweed honey but no trace of mint—only three-fourths of a mile, but no nectar gathered at that distance.

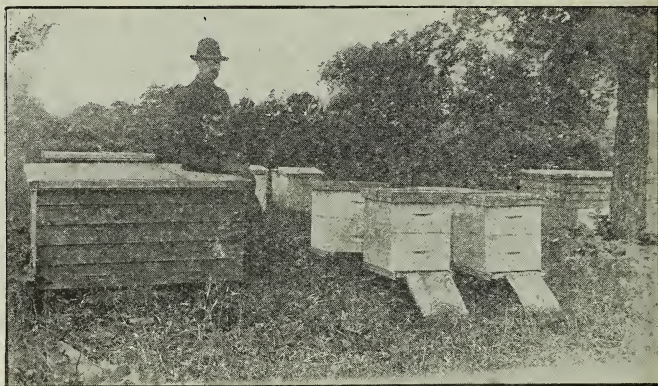
The third yard is south of Lake Jessup half a mile. Perhaps the lake is three-fourths of a mile wide here. That would make bees fly a mile and a quarter for the smartweed that abounds on its north bank. This yard is in an orange and tupelo section. There is plenty of honey from these in the hives, but none from smartweed.

A word to back this up from our experience in this county (Manatee). When I came to the county I stayed at Parish, a village set among orange-groves. I bought a few bees and transferred them from old box hives. I cut bee-trees in the woods, and transferred to the hives. I expected these bees to fill up on wild sunflower in October. There was a vast field of it a mile northeast of my yard. In the early fall it burst out into acres of gold, a thing of beauty and a joy to all. The flowers were full of nectar, thousands of pounds of it, but none got to my hives. So far as I was concerned these flowers were born to waste their sweetness on the desert air—dollars upon dollars' worth of honey, but I got none of it. So much for thinking that the Florida bee would gather sweets and bring them home if they were within a mile or two of the hive. Money was lost because of an error in judgment based upon the old belief that bees work a long way from home.

One more experience because it seems to bear upon this matter. Mr. Clute and I have bees in town, Palmetto. A mile north is the 450-acre grove of the Manatee Fruit Co. They keep bees to pollinate their fruit. It adds largely to their yield, but they are busy with other things and don't care to bother with the bees. They have turned them over to Mr. Clute who works them for half the profit. The big grove is full of

Spanish needle, which last fall secreted lots of nectar. The hives in the grove were filled with honey. Our bees a mile away got very little of it. What little they got came, in my belief, from the weeds that are scattered here and there in small patches in the back yards of the town.

Please don't misunderstand. It is not the



Winter case made of clapboard, siding, as used by A. J. Knox, Orono, Ont.  
See page 905, Nov. 1.

intention to show that bees never go a mile or more for nectar. But it is probable that they do not often do that. If my Florida observation is worth anything to me I must figure on the bees working over a radius of less than a mile; and that if I want my bees to get a full season I must be prepared to move them to stores that are a mile or more away. They will be just playing at gathering honey from scattered blooms here and there to no profit. If I'd move them a mile to where some plant is in full flower, play would quickly become work, and I'd greatly profit.

Bradentown, Fla.

## THE COLORS OF WESTERN HONEY

BY M. H. TWEED

A little carelessness in heating honey, changing it from water-white sage to a dark tasteless article, set me thinking about the question of dark and white honey from alfalfa. I talked with a man who is an inspector in one of the counties of southern California, many years in the business, and who, I noticed, took a leading part in the convention at Los Angeles. His idea is that the muddy condition of the Colorado River water used for irrigating is the cause of the dark alfalfa in the Imperial Valley,

and other points where water is taken from that river. I think he is mistaken, for I have seen at Rocky Ford, Col., the whitest of honey from alfalfa, and the water from the Arkansas flowing through the town in the irrigation ditches is almost thick with silt and vegetable matter.

Alfalfa honey from Utah or Colorado is invariably white. Now, why is it that honey from the same blossom in the great alfalfa valleys, Imperial, San Joaquin, and valleys of southern Arizona, is always



dark? I think it is the great heat, the continual sunshine, and the fact that no moisture either as rain or dew reaches the stalk of the growing alfalfa during its whole life; with the thermometer ranging from 90 to 120, without a cloud in sight all day and every day, is it not reasonable to suppose that the heat affects the color?

When I think of white honey my mind wanders over the northern and central states; but when I think of dark honey the scene changes; my mind's eye is on the southern states and the West India islands. There may be something in the soil. When

a man tells me his cantaloupes are from Rocky Ford seed it means nothing to me; but when he says they are grown in Rocky Ford I become interested.

However, I suppose this question is about as hard to settle as the why and wherefore of granulated honey. The man who has had little experience with granulated honey is sure to know all about it; but the man with large experience reaches a point when he feels with a great sense of weariness that he is not sure he knows anything at all about it.

Pittsburg, Pa.

## BEES AT THE PANAMA-CALIFORNIA EXPOSITION

BY JOHN W. LOVE

Here were the orchards of Valencia oranges, the lemons, grapefruit, and the other citrus fruits, and rows of persimmons, nectarines, figs, olives—almost everything that could grow in southern California. On an afternoon at the San Diego Exposition I had strolled out under an archway through a formal garden, and suddenly found myself on the model farm, part of the exhibit of the southern California counties. Every agricultural industry of importance seemed to have been recognized, even to the English-walnut business. Surely there ought to be some bees, I thought.

Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties together occupy the Southern California Building, and united to make one of the most popular features of the Exposition, the out-of-doors exhibit. On this model farm were the model poultry-yards, the model vineyard, and the model garage. I remember with what delight I lounged on the cool cushions in the bungalow and looked out of the open windows to the citrus groves. Indeed, it would be delightful to live in southern California.

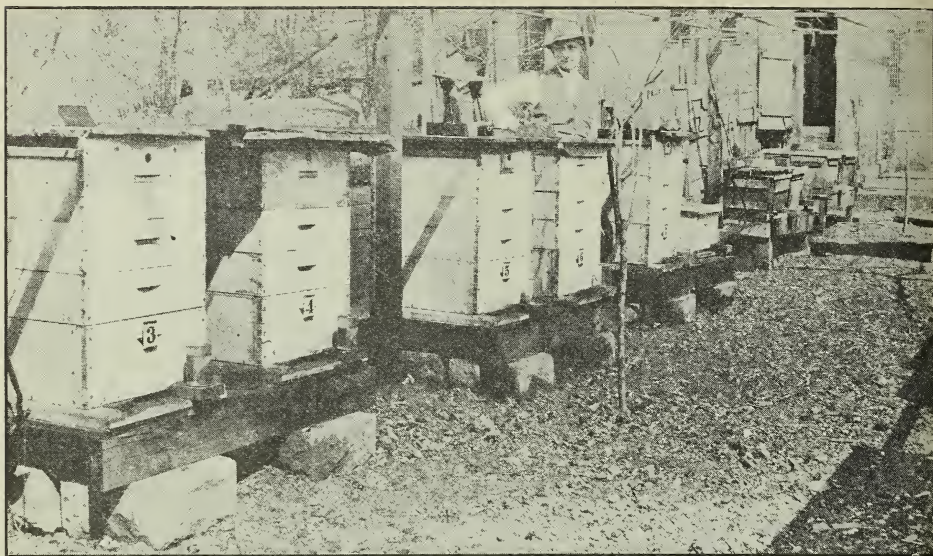
Finally I found the bees. Ten hives of them, each with ten frames, made a row of white between the trellises of the vineyard. "Do they attract much attention! Why, so many people walked across this lawn just to get to the bees that we had to put up the fence, but any one who is interested can just step over it." The attendant let me step over.

Bees used for exhibition purposes never gather much honey, of course, and the output of this miniature apiary was not likely to rival the harvest over in Imperial Valley. They pasture mostly on sage on the slopes of the Cabrillo Canyon, the attendant ex-

plained, and on some of the flowers in the gardens of the Exposition.



One of the most popular of the exhibits at the model ranch.



I have had the fever for twenty-five years.

## A SMALL BUT PROSPEROUS APIARY

BY JOHN J. LENERT

Twenty-five years ago, while I was looking at some bees owned by a friend, one of the pesky things stung me under the eye. From that time I had the bee fever. A short while after that my father purchased a colony for me, and I have been a small beekeeper ever since.

I have had as many as twenty colonies

and as few as two. My best yield was 300 lbs. of comb honey from eight colonies. My best crop of extracted honey was 750 lbs. from seven colonies. One colony gave me twenty-seven full Langstroth frames in 1913. Last year I took off 200 lbs., but had to feed it all back again in the fall.

Elmwood Place, Ohio.

## "WHAT IS IT—NOSEMA APIS, BEE PARALYSIS, OR WHAT?"

BY M. Y. CALCUTT

It is *Nosema apis*. There can be no doubt that the disease that has scourged the bees in this section of the country is nothing else than *Nosema apis*, otherwise known as the Isle of Wight disease. On August 28 I sent samples of both brood and bees to Dr. E. F. Phillips, in charge bee culture investigations, Washington, D. C., and received the following in response:

No disease has been found in any of it. The comb consists of advanced pupæ and bees ready to emerge, and these do not seem to be at all affected. No cause for trouble has been found in the adult bees.  
E. F. PHILLIPS.

Before I received the above letter from Dr. Phillips I had a long talk with Prof. Trevoe Kincaid, and he informed me that he had discovered the germ that was caus-

ing all the trouble with our bees. After a careful examination with the microscope he had discovered and identified it as *Nosema apis*. The first few bees examined by him did not show the disease, or, to be more exact, he did not discover *Nosema apis*, because he was not looking in the right place. Once he had discovered the bacillus (in the alimentary canal) he had no trouble whatever in finding it thereafter. It would seem from this that Dr. Phillips in some manner must have overlooked *Nosema apis* in the sample that I had forwarded to him.

The sample adult bees were caged from those crawling in front of the hive, and placed in a queen-cage over night. Next morning all were dead.



At the time of writing you I had made up my mind that it was the dreaded Isle of Wight disease. The bees did not act as they do when afflicted with the so-called paralysis. I cannot agree with some that the two diseases are identical. The bees are not swollen and elongated as in paralysis, except in very rare cases. Another strange feature of the disease with us is that it was not followed with dysentery—at least none of the hives examined by us showed it in any degree, although we had cases reported to us.

Now I sincerely trust that Mr. Herrod is wrong in his broad and sweeping statement (page 57, 1914), "Now, any one with the slightest experience of Isle of Wight disease knows that, once stock is attacked, it is doomed." If that statement is true then we shall not have a hive of bees that will survive the winter, for every hive in this section has been more or less afflicted. It is true they are still dying, but very slowly as

compared to what they were in August and September.

In an article the editor says, "The presumption is that the peculiar season—cold, rainy, and wet—has had something to do with it." Let me say that this is the warmest season that we have experienced in the twenty-seven years that we have lived on the Sound. You further say, "We have never heard of *Nosema apis* in this country." Well, let it be hoped that it will never reach you.

It is my belief that we have a couple of hives that are immune to this disease—that is, very few bees have died in these hives. If that is so, then we can restock from them.

What you say regarding the brood as only neglected and starved brood may be so; but scales are left in the cells as in American foul brood. No odor arises, though, from the dead brood.

Seattle, Wash.

## WAS IT REAL HONEY-DEW? AN INTERESTING INCIDENT

BY JAMES S. JOHNSON

On the 6th of September I was attracted to my apiary by an unusual roaring of the bees before sunrise. I found them storing honey very rapidly. There were handfuls of bees in front of each entrance; and as the sun came up they worked all the harder. As this was something unusual, there being no flora sufficient for such a flow, I began to wonder what the nectar could be coming from. I made a search, but could not find the source, so I decided that they were getting honey-dew, as I noticed some wasps, flies, and hornets on poplar.

The next morning the same thing occurred again, though even more pronounced than the day before. The bees were coming out of the hives just as though some one had kicked the side of the hive with his foot. I could still see a good many stars, and there was some fog, which made the bees act queerly; but as the light was better and the sun came up they became natural and went about their business with a rush.

In a short time the grass in front of the entrances was covered with laden bees. I caught one of them and pressed its side to make the bee disgorge itself, and the honey was water-white. I decided then that they were not getting honey-dew, and at once began another search. I finally found that they were working on what I call spotted-oak trees. These trees are the rough and scrubby oaks that grow high up on the hills. The bees were getting the nectar from

the base of the buds. They did not work on all the buds, but on certain ones that were on stems about a quarter of an inch in length. I am not even sure that they were buds, but there is a small opening in the end that continuously secretes a clear sweet liquid. I don't know whether to call it nectar or sap, or what. Unless this could be called a blossom I suppose the liquid would hardly be nectar.

My bees are filling their combs full of this stuff; all the queens are laying, and brood-rearing is in rapid progress.

I am undecided as to whether this will make suitable winter stores. If they don't stop storing it the bees will soon have their hives full.

Langnau, Ky., Sept. 13.

[We sent the above very interesting letter to Dr. Phillips, who, in turn, handed it to the Forest Entomologist for attention. Mr. Hopkins' reply follows:

We have referred the specimens to our Specialist in Forest Hymenoptera, Mr. S. A. Rohwer, who states that on certain of the buds of the oaks sent there were galls of one of the gall-making Cynipids, probably referable to *Neuroterus versiculus* (Basset). It is very probable that the sweet liquid that the bees collected is a secretion from this gall as there are a number of Cynipid galls of similar construction which are known to secrete a sweet liquid which attracts insects, especially ants, in great abundance. This is an extremely interesting and unusual record.

A. D. HOPKINS.

Forest Entomologist.

Washington, D. C., Oct. 8.

## THE MILKWEED OF BRITISH COLUMBIA

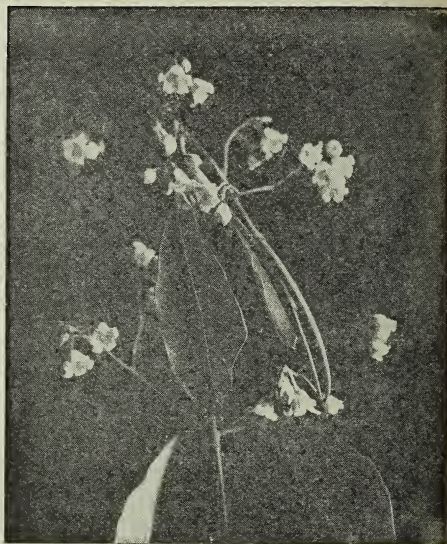
BY W. J. SHEPPARD

One of the best nectar-yielding wild flowers of British Columbia is milkwort, or, as it is locally termed, milkweed, on account of the milklike sap exuded when a portion of the plant is broken or injured. It is not an *Asclepias*, however, but belongs to the periwinkle family, its botanical name being *Apocynum hypericifolium*, so called owing to the similarity of foliage to the hypericum, or rose of Sharon.



The foliage is similar to that of the Rose of Sharon.

It grows from a foot and a half to two feet six inches high, and bears umbels of small bell-shaped flowers, white tinged with pink, which have a strong but fragrant perfume. It commences to bloom about the



It bears umbels of small, bell-shaped flowers.

end of June, and stays in flower for several weeks, being continually visited by the bees. It is a perennial, and grows luxuriantly over nearly all this section of the province.

It seeds freely, the thin hanging pods when fully grown being about three inches long in clusters, reminding one somewhat of miniature dwarf beans. The pods when ripe burst and set free the white-bearded seeds similarly to the fireweed, which is also very abundant here. The honey is light in color, with a pleasant flavor, reminding one of the aroma of the flowers.

Nelson, B. C.

## SUNDRY APHORISMS

BY ARTHUR C. MILLER

Don't have any weak colonies. Avoid them or eliminate them. The first is the better and the cheaper way.

So now it is aster honey which is to receive the blame for killing the bees in winter. Guess again. In this locality bees winter well on aster honey, but may die on sugar-syrup stores. That is not a fable. What is the answer? Worn-out bees. "Handling" a lot of sugar syrup or a lot of thin nectar late in the season ("late" means when clusters are contracting) puts

too much labor on the bees, and "ages" them, and that late, particularly with old queens, there are no youngsters coming along to take their place. The solution here is young queens put in about August 20. Mr. Crane, please take notice.

If you must keep bees among the fruit-growers, do not put your hives in the orchards, but only near them—say horse-distance off. There are some two-legged horses which work in orchards who also object to bees at close quarters,



If fruit-growers practice spraying while trees or cover crops are in bloom they should know what will happen. No bees will be kept near them, and the wild bees will be killed off, and I guess it will be a good thing for beekeepers. Oh for sundry reasons! [See article on page 994 by F. R. Beuhne in this issue. The only conclusion we can come to is that sometimes spraying with arsenate of lead while the trees are in bloom kills bees and sometimes it does not. The fact that it does sometimes, always makes the practice dangerous.—Ed.]

Large black ants in this region live in hollow trees, decayed wood, walls of buildings (including chaff hives); and poison which they will take home and eat is the only way to reach them.

No, sir; this is not an easy place to winter bees—averages about as cold as central Ohio, and the changes and extremes are worse.

In considering winter cases, just remember that Quinby said a first-class colony will winter under almost any condition; but it is the second and third grade ones which call for care. Be a "first-class" beekeeper. It pays, and is a lot more fun. I've met some, and ought to know.

If you do not keep record of your apiary you should, and there are just two vital things worth noting—the queen, what she is, and the product of the stock. If you are doing up-to-the-minute, economical beekeeping there will be no other things to note. Isn't possible? Well, it just is. Have three hours to do ten hours' work, one mind to keep track of several important lines, and you will be forced to economical methods.

Piping antics of queens were described long ago, and the attitude and action is the same in the cell as out of it; that is, body flat, chin in, and muscles tense. "Piping" and "quahking" are one and of the same

origin. Avoid it in your honey-producing stocks. [Dr. C. C. Miller will please note that the other Miller agrees with us; but say, you other Miller, why avoid queens that pipe and quahk?—Ed.]

What a relief it is to have an Uncle Sam, leastwise when he turns a Phillips loose on a job! They are tackling the science of bee culture with the best of recording apparatus. I tried it with imperfect tools; and, though I learned much, I also learned that much of my work only suggested what was wanted. Go it, E. F. P.; you'll bust some of our pet notions, and put crimps in the apicultural reputations of some of us, but it will be worth while.

Many farmers do a losing business all their life. They live, but their farms grow steadily poorer. They do not show up so often in the mercantile reports, but they do a losing business nevertheless, and only because the soil cannot demand a settlement do they avoid a "failure." Beekeeping is a rather remarkable branch of agriculture, and has paid some fine profits; but it is fast getting down to brass tacks, and the men who do not run the business economically and far-sightedly will go under as surely and in the same ratio as in the rest of the business world.

When you are planning honey exhibits study color combinations. Patriotism is all right; but the flag is not the best combination of color to put beside honey. The blue against yellow (golden honey) is apt in some lighting to give a very unattractive green cast.

Producing is less than half of the problem, selling is the rest. Just study that.

Interesting, the difference in the size of stocks in warm forenoons and afternoons of April and early May. The forenoons then are a fine time to hunt up and clip queens. This for the novice particularly.

Providence, R. I.

## FILTERING HONEY; NO NEED FOR WORRY

BY LUIS RAMIREZ CASABLANCA

In the last issue of *GLEANINGS*, and under the same heading it is said that the workers in the Federal Carbohydrate Laboratory in Washington have passed dark-colored honey through bone char, securing a product as clear as crystal, and that the only drawback to a general employment of this method of filtering is that the cost of bone char is about \$60 a ton. This would not be the real drawback of the method, as the revivification of the bone char would

solve the economic problem, as was long ago shown in the sugar-refineries. The real drawback of the process is that the bone char will absorb both the color and the delicate fragrance of the honey. It is well known that the very strong and offensive smell of the impure alcohol can be entirely eliminated by means of the absorbent bone char or of a good absorbent charcoal. Think what would become of the delicate fragrance of the honey under such energetic

treatment! We should certainly have "a product as clear as crystal," but as insipid, as unsavory as the simple syrup of our drugstores.

The workers in the Federal Carbohydrate Laboratory "looking now for a cheap wood charcoal which will take out the color" must look afterward for a cheap decolorizing charcoal which will not take out the sweet

flavor of that substance collected by the bees from the flowers. But those who know the matter do not believe with the experimenters that they will soon find it. So, Mr. Editor, such honeys as the inferior tropical grades will never compete with the best white clover, sage, and alfalfa now in the market.

Toa Alta, Porto Rico.

## AUSTRALIAN NOTES

BY F. R. BEUHNE

### DENATURED SUGAR.

When I read GLEANINGS for April 15 I was forcibly reminded of the saying that you must go abroad to get news from home. I have been a beekeeper for thirty years, read all Australian bee-journals that were ever printed, have been connected with beekeepers' associations all along, yet I have never seen denatured sugar or heard or read anything about it or about a request to the general government.

As a matter of fact, there is very little sugar imported, the production of cane sugar being nearly sufficient for Australian consumption. Further, very little sugar indeed is used for bees, and as a rule only at the end of very abnormal seasons for the purpose of supplementing winter stores. In my own experience this has occurred only twice in thirty years.

That in some instances sugar might with advantage be employed for stimulative spring feeding is proved by experiments made during the past three seasons. Our sugar is from cane grown in the northern state of Queensland. There is but one beet-sugar factory (and that in Victoria), and its output is small—about 1000 tons per season. The enterprise is by no means a commercial success.

### THE HONEY SEASON IN AUSTRALIA.

Owing to the almost unprecedented drouth experienced over the larger part of this continent during the season of 1914-'15, the total yield of honey is probably less than one-third of a normal crop, while the number of colonies has already declined considerably. The loss of stocks may amount to two-thirds by spring unless the winter, which is now on, proves exceptionally favorable.

The loss of stock is due less to a shortage of nectar than to an entire absence of pollen during the summer months. Breeding entirely ceased during long periods; and as a result colonies dwindled away, even where nectar was available in the blossoms or

combs of honey in the hives. Many beekeepers were unaware of the total stoppage of brood-rearing till it was too late to apply the remedy of a pollen substitute; and some colonies gave out, even after some of the pollen-bearing eucalypts flowered in autumn, the old bees wearing out before enough young ones hatched from newly raised brood. Happily the drouth is now at an end, splendid rains having fallen lately.

In consequence of the small yield and the great demand for Australian honey for army contracts, prices have reached record heights, with 15 cents for extracted in bulk, and 40 cents for beeswax.

### BEES AND THE SPRAYING OF FRUIT TREES.

Observations as to the effect on bees of the spraying of fruit-trees with poisonous compounds have now been made during four seasons at the experiment apiary connected with the Government School of Horticulture at Burnley, Victoria, and no harm whatever resulted to the bees or the brood. It is, therefore, very interesting to read, p. 306, April 15, that at least one other institution has arrived at the conclusion that spraying does not necessarily injure bees, even while done when the blossoms are open.

From the report on the Burnley observations, which was published in the *Journal of the Victorian Department of Agriculture*, May, 1914, I extract the following:

At the Burnley apiary the hives are right under the fruit-trees, and at the time of spraying with Bordeaux mixture the ground had not yet been plowed so that the spray fell not only on any fruit-blossoms which were open, but also on the capeweed (a profuse pollen and nectar yielder), then abundantly in bloom. Neither the spraying with Bordeaux mixture nor the subsequent one with arsenate of lead had any effect whatever upon the bees. The colonies developed normally and without any check. There was not at any time dead brood in the hives.

Further, in response to repeatedly published requests, only two cases of alleged poisoning by spraying were reported in four years. One of these the writer investigated on the spot, and found that the bees



had died from starvation—not a drop of honey being present in the combs of the three colonies. In the other case the dead bees sent to the Department for analysis consisted of drones (without a worker bee among them), which had evidently been expelled from the hives owing to a dearth of nectar.

#### BEE PARALYSIS.

During my work as inspector I am frequently asked what paralysis is. The answer I give is: It is a name given to certain symptoms of distress. Major Shallard's article in *GLEANINGS*, Dec. 15, and your reply, Jan. 15, page 46, show that we have got no further than that yet. What I would call paralysis is the condition described by the editor in his reply to Mr. Shallard; but like symptoms are ascribed to the Isle of Wight disease, otherwise *Microsporidiosis* or *Nosema apis*. But you can find hundreds of colonies with the nosema parasite, and no symptoms; and any number of others with all the symptoms of paralysis but no nosema parasite in the bees. Then there is the petering-out of colo-

nies through a cessation of brood-rearing in summer or autumn, or through shortlivedness caused by a deficiency of the nitrogenous food of the larvæ. This is called the disappearing disease, because as a rule you see few or no dead bees. They die normally. In the one instance the long break in the generations is the cause of extinction; in the other, the failure to live the allotted span of life; and quite often there is a combination of both.

Quite apart from the above there may be colonies in the same apiary that do have paralysis symptoms so the beekeeper calls the whole loss paralysis. If it happens in spring, and the bees show dysentery as a result of bad winter stores, that is also paralysis; and if losses occur without any symptoms it is still paralysis, only the symptoms have changed. It is a convenient name to cover a multitude of shortcomings of nature, and, occasionally, of man. All the same, rabbits and poison are not in it, for it occurs when there is no rabbit-poisoning, and often does not occur where there is. Tooherac, Australia. May 31.

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## SOME FAMOUS HONEYS OF THE OLD WORLD

BY N. TOURNEUR

That delicious, fragrant, and nutritive matter—honey—is estimated according to the flowers from which the bees extract the sugar existing in the nectaries of the flowers. As certain flowers are more prevalent in particular countries the honey is designated by the name of the country in which it is produced.

The honey from the southern parts of France has held its reputation for generations. That from Narbonne is the most esteemed. It is produced from the flowers of the order of plants termed *Labiatae*, such as rosemary, sage, clary, lavender, mint, pennyroyal, basil, savory, thyme, marjoram, dittany, germander, and many others. All the labiate herbs are very aromatic, which accounts for the peculiar fragrance and flavor of Narbonne honey; and they are free from the principle which imparts to many other honeys an acrid and slightly pungent character. So particular are the Narbonne beekeepers in their choice of the flowers from which their bees collect the rich juices that not only have they the custom of growing choice plants, such as jessamine and mignonnette, around the hives, but at particular seasons the bees are carried in search of the labiate blossoms, the hives being transported by easy jour-

neys from one part of the department to another, and made to rest several days, sometimes weeks, at the bases best calculated to improve the fragrance and quality of the honey.

Narbonne honey is celebrated over all Europe, and the French government gives every facility to foster bee culture throughout the department. Those who have once tasted Narbonne "virgin" honey, the real product, not that which unscrupulous traders sell as such, can never mistake it for any other. There is nothing to be found with the same peculiar fragrance. It is the sublimation of sweet odors and winery sunshine. Perfectly colorless when in its purest state, in warm weather it is like a clear syrup, limpid as the crystal stream. It is quite free from wax, and the common honey expressed from the comb contains very little.

The honey of Spain and Minorca is fine and fragrant, but inferior to that of Narbonne. In Italy there are several fine honeys, but they are not plentiful, though of the coarser kinds there is great abundance. One kind that is gathered by the Milanese, and in Switzerland and throughout the Apennines, is made great use of by Italians. It is produced from the fir, the pine, birch,



L. G. Saugier

M. G. Dadant

C. P. Dadant

H. C. Dadant

L. C. Dadant

DADANT &amp; SONS. SEE EDITORIAL.

and other like trees, and consequently, in addition to being of a dark color, almost black, its taste is almost disagreeably rank and strong; yet with this honey the Italian cook prepares many very delicious dainties.

The honey of England as a whole is inferior to that of the south of Europe, both in hue and taste, and contains much more wax, though in districts where buckwheat is cultivated it is much better, the improvement arising from the flowers of that plant. One does not include in this, of course, certain noted tracts where certain flowers flourish especially.

But the honey of all honeys is found far a-sea. It is not the much-boasted and very inferior honey of Hymettus in Greece, but that obtained in the island of Bourbon, a dependency belonging to France, north of the Mauritius, in the Indian Ocean.

It as far surpasses Narbonne as Narbonne surpasses the other honeys of Europe. Its color is a light green; and owing to the heat of the climate it must be kept, owing to its liquidity, in black wine-bottles or in stone jars. It is not obtained from the domestic bee, but is found in the woods, in hollow trees, where it is deposited in such quantities that from three to four hundred pounds are often taken from the same

trunk. Its extraordinary rare flavor arises from the great variety of aromatic flowers which fill the forests and sparse woodlands of Bourbon. The Mauritius, Rodrigues, and Reunion Islands, though also growing many varied nectars for the bee, do not produce this particular kind of honey—the green honey of Bourbon.

In flavor, a beautiful kind of honey found in Georgia, Asia Minor, comes close to the Bourbon, but it is of a different substance wholly. Deposited by the bees in the clefts of rock, it crystallizes and becomes hard. This honey is not viscid, but is like the white sugar-candy exported from China in its very finest and purest crystalline condition. If kept a long time, it takes on a yellow tinge. It is rich in saccharine, but contains no mucilage, and will, therefore, not ferment spontaneously. In Constantinople it is considered a great rarity, and by the natives of Persia it is considered to be the true nectar, giving sweetness and roundness of flavor to their favorite honeyed sherbet.

At the present time it is worthy of note that one of the finest honeys in Turkey is that produced by the bees from the aromatic labiates so abundant on the now blood-drenched peninsula of Gallipoli.

Rayleigh, Essex, England.



## GIVE US SOME LIGHT

BY F. J. LEE

A year ago my daughter had thirteen colonies. When it came time to put the bees in the cellar (concrete walls and floor) for winter her husband wanted to darken the windows; but this being inconvenient, he took a half-depth super, bored a two-inch hole through both sides, and tacked some wire cloth over these holes, put it on a bottom-board, and with a piece of lath stopped the beeway entrance and set the hive on this and put them in the cellar—covers all on.

I was in the cellar several times during the winter, and once in February I could not detect a sound from them. I tapped the side of a hive, and the bees at once "telephoned" "We are all here." I could tell the time on a watch every day without artificial light.

About the first of April the bees began to buzz and try to get out; then the windows were darkened for a couple of weeks before the hives were taken from the cellar.

Every colony was alive and in fine order—very few dead bees on the bottom-boards. Just across the street I had six dead colonies out of eighty-five in a perfectly dark cellar. The young people have twenty hives this fall; and if they winter better than mine this winter I will turn on the light.

Lee Valley, Ont.

[The plan described above is very similar to the Hershiser method of wintering, described in these columns a few years ago. Mr. Hershiser, however, goes further, and has a much larger opening covered with wire cloth below the hive.

We tried the plan in our own cellar, but with rather disastrous results. With the bees in ideal condition, and the temperature and ventilation all that can be desired, the plan gives good success; but if conditions are not just exactly right the few bees that begin buzzing around on the wire cloth trying to get out raise such an uproar that the whole colony is likely to become uneasy. Is it not better to allow any old uneasy bees to get clear away from the hive rather than to have them confined where they can stir up the other bees?

Our correspondent had 85 colonies in his cellar, while the cellar described held only 13. Other things being equal, it is a more difficult matter to maintain an even temperature and quiet wintering when there are, say, 85 colonies in a room than when there are less than 20. Is it not probable that the 13 colonies wintered successfully in spite of the light and confinement rather than *because* of these conditions?—Ed.]

## MY FIRST YEAR'S EXPERIENCE IN BEE CULTURE

BY D. S. HUNT

First I want to mention a few incidents of my early childhood. When I was a small boy my father was a keeper of bees, but he kept them in box hives, and they were of the hybrid strain. They were very vicious, and possessed of an inclination to attack and sting any object that came too near them. It was hardly possible for me to come within ten feet of their hive without being chased away. During the severe winter of 1894 father lost every colony that he had with the exception of two or three, and he became so discouraged over the loss of the bees that he sold the remaining colonies to a neighbor the following spring for \$1.50 per colony.

Now for my experience:

Last May I purchased a three-frame nucleus and tested golden Italian queen. As soon as they were placed in their new home they immediately began to work very vigorously, and up to July 15 they had increased

so enormously in numbers that I decided I would do some artificial swarming. This was accomplished very nicely by placing four frames of the best brood that the mother hive contained in the newly made hive, together with the mother queen, leaving the original hive the duty of producing them a queen. This they did in due course of time. But a few days after I had divided my bees it began to rain, and kept it up for about two weeks, slowing up brood-rearing and honey-gathering. However, both colonies succeeded in obtaining some honey. In the meantime I placed a super with comb foundation in frames on top of the old colony, and they stored about fifteen pounds of honey in the super.

On August 28 I made an inspection of the two colonies, and, to my astonishment, found that there was no honey in either colony. So I got busy and supplied them with syrup made by dissolving granulated

sugar in water, the ratio being one part sugar to one of water; and I have been giving each colony half a gallon every other day by the Boardman-feeder process. At

present, Sept. 10, they seem to be doing finely in rearing brood, pulling comb, and laying up stores.

Hiawatha, W. Va.

## WINTERING ABOVE EMPTY COMBS

BY H. E. CROWTHER

The plan of wintering bees over extra combs of honey or empty combs has been practiced with good results by Messrs. Atwater, Coffin, and others for many years. The main consideration is to have the brood-nest heavy above, and the combs with some honey in them, underneath. This should be done when the bees are not hunting honey too strongly, for in large yards it has been known to start robbing. Also it should be done early enough to prevent loss of any bees in the fall.

A winter like that of 1914 in Idaho emphasizes the necessity of a solidly filled brood-nest, as the continued cold makes it impossible for the bees to move sidewise or downward to the honey. Many colonies starved outright with plenty of honey at the sides of the brood-nest, but out of reach of the cluster. The bees seem to be able to move down the length of the combs well enough; but when the back end of the hive is reached, it is quite a different proposition for them to get around the ends of the frames.

Wintering over empty or partly filled combs applies mostly to colonies run for extracted honey. In case of comb-honey production there are but few extra bodies of honey to be set under; but anyway, the plan is not as badly needed as with colonies run for extracted honey, for the reason that the comb-honey colonies are much heavier, due to the extra crowding that was necessary.

Great care should be used to keep the mice from eating the combs. We reduce the entrance to 5/16 of an inch. We are now using a great many unwired, shallow (six-inch) frames which are not so much of a loss if chewed a little, and are more easily replaced. We have been using them successfully in connection with eight-frame Langstroth bodies for comb honey. The idea is to winter with two of them for each brood-nest—one of them if full enough on top, and the other below. We leave the colony so arranged until stimulation is necessary in the spring. Then the two shallow supers are reversed, the honey going below and the empty combs above. This puts the

bees up to the work of moving and working over the honey, and stimulates brood-rearing equal to or better than any other way I know. If any of the honey is candied, it is worked over, and there is no bother at extracting time, if any happens to be left in the combs. When comb-honey supers are needed, the shallows can be assembled on a few colonies to be extracted later, or used on others for wintering.

This plan was more fully explained by E. F. Atwater, p. 411, May 15, but it did not get the attention it deserved.

The longer we use these shallow extracting-frames the better we like them. In the extracting-yards we have gradually worked into them for several years back, and find them very nicely taking the place of the old deep supers. With them we need but few excluders, and that is an advantage, for I have come more and more to consider excluders quite a hindrance. (I refer to the old-style zinc and wood excluders.) The new wire excluders which we have been trying in yards where we still have a great many of the deep "queen-attracting" combs, seem to be a great improvement. I should think there would be no more demand for the old zinc pattern

Parma, Idaho.

### Feeding Coal-oil Flavored Honey

I notice in GLEANINGS a query in regard to feeding bees honey tainted with coal-oil flavor. In 1867 my grocer had some coal-oil-flavored sugar. As I had bought sugar from him at times to feed my bees, he offered me this injured lot cheap. I fed some to a colony with no bad results. Then I took one of my Italian colonies, and put it in an empty hive full of frames. One frame was partly filled for bees to cluster on. I fed the bees about thirty-five pounds of sugar, 2 to 1, and then found the hive nearly full of nice white comb sealed over. The combs were full of syrup, and a good bit of brood was in the hive. This was late in the fall after all honeyflows had stopped. In the following winter this was the only colony I had that did not have dysentery. A good many others died.

The next spring, to satisfy my curiosity, I took a little of the comb left over and tasted it. It had the same coal-oil flavor. After fifty years of experience I would not hesitate a minute to use such coal-oil-flavored syrup.

Luton, Mo.

JOHN M. MOHLER.



# Heads of Grain from Different Fields



**The Backlot Buzzer**

BY J. H. DONAHEY

*Uncle Raspberry Flow, who lives up in Michigan, and who is always getting into arguments with his wife, says if his queen don't quit quakking all the time he's going to leave the old hive.*

## The Uniting of Weak Colonies; Why Does the Combination Dwindle?

It is pretty well known and admitted that the uniting of two or more weak colonies for the purpose of making a strong colony is practically useless, and results in no lasting benefit. In a few days the combination colony is left with no larger population than before.

After diligent search of modern authorities I have been surprised to find but slight mention and no explanation of this great loss of bees. It would appear that knowledge of the *fact* is deemed sufficient, and a knowledge of the *reason* as of little importance.

Is it not a fact, that a weak colony is always composed of mostly old bees—that is to say, a colony which is weak from natural causes and not from accident or human agency? If such is the case we need not look much further for the cause of rapid dwindling after uniting. A large family of old bees becoming enthused by their sudden increase of force loses many from the excitement, but goes to work vigorously and beyond its strength and age, the effect being to exhaust quickly the vitality of the oldest of the old bees, which then fall by the wayside in greater numbers; whereas, if no uniting had been done the weak colonies would have dragged along quietly for a longer period, only to succumb finally.

As suggested, if "old bees" is the reason (as appears to me entirely logical) then the condition is such that there is no remedy when the uniting is done solely for the purpose of utilizing weak colonies

with the idea of making one good one in place of several poor ones, and the futility of the plan is self-evident. There is, however, some satisfaction in knowing why a thing succeeds or fails.

New Jersey.

B. KEEP.

[It sometimes happens that, when it seems desirable to unite, the bees of the weak colony are old, weak, worn-out ones, just as you say. This condition may apply in the spring as well as in the fall. Uniting in either case will not result in much good, and therefore your explanation is quite plausible, and possibly may be the true one.

Very often, however, colonies are united in the same apiary, made up of young and vigorous bees; but the loss is occasioned by these young bees going back to their old stands and becoming lost, or else they find their way in near-by hives. Uniting, however, can generally be practiced to very good advantage, if the bees are not too old, by uniting two colonies side by side, or taking the nuclei from an outyard and uniting them after they are brought home, as explained in the reply to Mr. Stratton, in this department. In either case, if the bees are not too old, a fairly good colony will be formed, in good shape for winter. We have been doing considerable of this outyard uniting and neighbor-hive uniting, and the results have been very satisfactory this fall. Moreover, there has been no diminution of the strength of the united colony as there has been sometimes.—Ed.]

## Uniting and Feeding; Is It Too Late?

I should be glad to have your advice as to the relative advantages of uniting or feeding weak colonies at this season in this section. Owing to a cold spell when the asters were in bloom, or from some other cause, brood-rearing stopped early, and bees are short of winter stores. Many beekeepers are facing the alternative of feeding or doubling up, and, no doubt, will be interested in your answer.

I will say that the aster is our main dependence for winter supplies, and we have no trouble in wintering on summer stands.

C. L. STRATTON.

East Chattanooga, Tenn., Nov. 12.

[You speak of the alternative of uniting or feeding. We know of no reason why you should not do both. If the colony is weak it ought to be united; and then if it has insufficient stores the combination should be fed. Of course there are various ways of uniting. To pick up weak nuclei from several different places in an apiary, and combine them together in one place, is not satisfactory, on account of the many returning bees. The usual plan is to take two colonies side by side. Remove one hive, and then place the other hive in the space between the other two. Put the two colonies together, preferably on a cool morning or evening, and then let them gradually unite when it warms up the next day. If there is no choice of queens, let the bees make their own. Of course if one queen is better than another the operator should kill the inferior one and unite.

It sometimes happens that there will be a medium-sized colony and a weak one side by side. Remove the hive containing the weak one entirely, and put the weak one with the strong one or the medium-sized one, and the uniting will be accomplished very satisfactorily. When colonies are at outyards, and it is expected to move the outyard to the home yard for wintering, the uniting can be very easily accomplished by placing two, three, or four weak nuclei together and uniting at the new location.

In the matter of feeding, if the weather has turned so that it is cool during the day, especially cool nights, the syrup should be given hot—about two

parts sugar to one of water by measure or weight. But the syrup should be thoroughly stirred so that it will be all dissolved before giving to the bees. The aster stores would do no harm in any case, providing the syrup were stored on top of the aster. Of course it is always desirable to do the uniting early in the season and feeding early if possible. But even when early feeding is practiced, a final feed sometimes becomes necessary if brood-rearing sets in between the time of feeding and the final packing in the fall.—ED.]

### Compensation on a Contingent Basis; Number of Colonies Needed per Acre in Citrus-groves to Pollinate the Blossoms

*Mr. Root:*—I should be grateful for your opinion on the following. Mr. A owns some hundreds of acres of citrus and deciduous orchards in two groups sixty miles apart. He wishes to develop apiaries for the primary purpose of pollination, but with a view to having them profitable in themselves. These are to be developed from a beginning of thirty colonies to take care of pollination as the young trees come into bearing. B has been secured to take complete charge of this apiary development, and control policies and methods of development. A pays B \$1.00 a year per colony (spring count) for management, \$1.00 per colony increase, and 50 cts. per hour for actual labor in apiary and office. A, of course, pays all expenses of labor, equipment, etc. If this arrangement is unfair to either party, please state what changes you would suggest, and also any better basis for agreement.

Please inform me as to the ratio of colonies of bees to acres of deciduous orchards to secure thorough pollination to secure the maximum honey yield. Glenn, Cal., Oct. 19. PAUL J. DAVIS.

[It is rather difficult to give a detailed answer to a proposition of this sort. Perhaps the plan proposed of compensating B is fair; but a surer and a better way would be to pay him so much a day for the time actually employed. These contingent schemes of compensating an employee sometimes work out well, but more often they cause dissatisfaction, not to say quarrels, between the parties.

We usually estimate about one colony to the acre for apple-orchards as being sufficient to pollinate when weather conditions are at all favorable. When the weather is bad during the time of bloom, more colonies are needed, as practically all the work of mingling the pollen may have to be done inside of an hour. In citrus groves, one-fifth or perhaps one-tenth of the number of bees required in an apple-orchard would be sufficient. The reason of this is, because the weather conditions are more favorable in orange, lemon, and grapefruit groves, and because, further, the blossoms do not all come out at one time. This enables a smaller number of bees to do the work because the time for doing the work is greatly extended.—ED.]

### How to Get in the Game

A correspondent says that he is investigating the bee business with a view of starting an apiary, and he asks how much land is needed for five or six hundred colonies, and what would be most suitable.

I have written him that unless he is experienced in the bee business it would be a great mistake to start with as many colonies as he suggests. One must "grow" into the business, so to speak, so that the errors made while learning will not be so expensive. I began with four colonies, and was five years building up to one hundred stands. The mismanagement and mistakes made with those four colonies would cost me a pile of money if I should do now what I did in the beginning, and would utterly discourage a beginner.

One acre of land would be sufficient for yarding 600 or more colonies; but in the Mississippi Valley states it is seldom that more than 100 colonies are kept in any one place. An apiarist running a great number of colonies has them scattered through several yards so as not to overstock any one locality. In selecting a site for an apiary I should prefer it near some habitation on a bluff or hill land overlooking a wide area of river bottom or swamp. Such a location has an abundance of honey-yielding flora, and does not suffer from drouth.

Washington, Ind.

S. H. BURTON.

### How Fast Does It Go?

How many revolutions per minute should a honey-extractor make?

Nelson, B. C.

GEORGE FLEMING.

[There is no definite speed that can be given as proper for a honey-extractor, for it depends upon the condition of the comb. The reel should turn as fast as it is possible to turn it without having some of the combs broken by the centrifugal force. The older the combs and the tougher they are by reason of the layer of cocoons in case of combs used for brood-rearing, the faster the reel can turn without danger of comb-breakage.

New combs which are much more fragile must be turned very slowly until the bulk of the honey is out of one side, then the pockets reversed and the reel again turned slowly until the bulk of the honey is out of the other side. There is little danger, then, in speeding up to throw out the rest of the honey on the second side. The pockets should finally be reversed to the first side, and the reel again speeded up to throw out the rest of the honey on that side. With the older, tougher combs, this added precaution is not necessary.

An eight-frame power extractor should have a reel speed of 250 revolutions per minute on the average. The smaller extractors require a greater speed.—ED.]

### Virginia Bees Almost Down and Out

My bees gathered more honey in the spring than for five years before. They filled up the supers from locust bloom and white clover, and until the middle of July did very well. Since that time they have not made their own living.

We had so much rainy weather the latter part of August and early September that the bees got no benefit from the fall flowers. There were only two or three days in September that they worked on aster—our only fall flow here. As soon as the weather cleared, a frost killed everything.

I took two supers of honey off some of my hives, and found some of the colonies on the point of starvation. I have not a single colony with enough stores to carry it through the winter without feeding.

Ninety per cent of the bees in this section will die if they are not fed. June and July swarms made no honey at all, and it is the first time in several years that I failed to see some brood-rearing. If they can be wintered at all, bees will be very weak in spring. Several have lost colonies already.

Roanoke, Va., Nov. 12.

HENRY S. BOHON.

### Jackknife for Scraping Sections

I use a large-sized jack-knife kept very sharp for scraping sections. I have tried caseknives and butcher-knives, both dull and sharp, but like the jack-knife best. I have never tried sandpaper.

Aitkin, Minn.

WILLIAM CRAIG.

### A Correction

In the Nov. 1st issue, page 894, the description of my wheelbarrow should have given the length as 6 feet instead of 6 inches.

Heber, Cal.

JOSEPH GRAY.



A. I. Root

## OUR HOMES

Editor

And God said, Let there be light: and there was light.—GEN. 1:3.

And God saw the light, that it was good; and God divided the light from the darkness.—GEN. 1:4.

And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also.—GEN. 1:16.

And God set them in the firmament of the heaven to give light upon the earth.—GEN. 1:17.

A few days ago a man who has been for many years editor of our *Medina Gazette*, and a man much loved and respected in quite a region round about Medina, said to me something like this:

"Mr. Root, some day I am coming down to see you to learn, if I can, why it is that you, a man of *seventy-five*, should seem to be right in the prime of life, when I at *forty-five* seem to be just about played out."

I knew he had sold his publication and given up the splendid work he had been doing for years; and I had also been told that it was on account of ill health; and I have been planning to see what helpful advice I can give him. By the way, it occurs to me he said something about my "secret" of deferring old age. God knows I have no secret in regard to health or any thing else in this whole wide world, that I am not willing to give freely to any or all.

I think I have lately been showing briefly, not only here on these pages, but by word of mouth, that the great secret, if there is any, is outdoor air and God's bright sunshine. Before going further let me give you one of the kind letters that keep coming day by day. I suspect it was written by a woman; but as the writer does not want name given we cannot very well find out, and it does not matter much, any way. Now listen and be ready for a big hearty amen when you get through.

"SUNSHINE" AS WELL AS "FRESH AIR"—A NEW (?) DISCOVERY.

I have been reading your Home talks for several years with great interest; and after reading your Home talk on fresh air to breathe, for both humans and the little chicks, I was moved to write to you and tell you of my discovery, and that is—sunshine for the babies. We have a little one in our home, just three months old; and since the time he was about two weeks old he has had his sun bath daily—not with the sun shining on his clothing, but on his bare skin. He has never been sick, and has made a steady gain of 2½ lbs. a month, which is extraordinary, so far as I can find out.

Well, you ought to see how happy the little fellow is when lying naked in the sunshine. He laughs and crows and kicks, and shows in every way he can his extreme delight. His skin is as brown as a Mexican, and his flesh as firm as a working-man's. He sleeps all night, and has never given us any trouble in the way babies usually do, and we think the sunshine does it.

I am not writing this for publication. I want to ask you just to take up the subject of sunshine, and give us a talk on that, as you have so well done on the subject of pure air. Think of it! all the little calves, colts, lambs, and pigs can enjoy the sunshine while the poor babies are deprived of it. You have, no doubt, noticed how the little animals enjoy the sunshine; and do you believe one of them could be raised without it, or, when exposed to it, be covered up with blankets? They would be as worthless as plants raised in the shade. I could also mention that sunshine is the best mold and germ killer, and many other points. Sunshine for the babies, and grown folks too—not on the clothing but on the bare skin.

Fillmore, Cal., March 22.

W. C. G.

God bless the babies. (See "The right to be born sober," p. 867, Oct. 15.) If they have not a right to everything good in this world, who has a right? It rejoices my heart to see that, day by day, we are giving babies more thought and time than ever before. By the way, I wish my good friend would send us a picture of that "sunshine baby." The letter only emphasizes and calls attention again to what I have long had in mind. Outdoor air and sunshine are God's *two* great remedies. I would add, also, plenty of pure water—the purest that can be had. As for myself, I am quite sure that boiled rain water is best for me. Of course, I want it moderately cold. Next I would say good wholesome food—not too great a variety; nothing *at all* later than, say, four or five in the afternoon.\* I think the above advice is needed, *especially* by elderly people; and after the things mentioned we want plenty of good sleep† uninterrupted

\* In reading over the above after it was in type, it occurs to me I have not put sufficient emphasis on sleep, especially if I preach what I practice instead of "practicing what I preach." When I am doing severe office work, say several hours in the forenoon, or even hard work in the garden, I often find myself "used up." Then I go and take a nap. When things are crowding I have two naps a day, and in extreme cases as many as three. Just of late I have been called a good deal to give talks at Sunday-school conventions, etc.; and I have tried to get over home and get down into my "sun parlor" and get twenty or thirty minutes of sleep before I give my talk. I often tell Mrs. Root something like this: "Sue, I am to talk before a convention at two o'clock. I am now going to take a nap, and you must be sure to call me at ten minutes before two." With my little electric I can easily get up to the church in ten minutes. Then I will be ready to do my best.

Yesterday, Oct. 17, I was called to address a Sunday-school convention; but there was a crowded church, and several speakers were before me. So I had to sit and wait an hour and a half before I was called to speak. The consequence was, I was so tired of sitting still that I lost about half of my vim and enthusiasm. Perhaps it is not possible for every person to recuperate as I do by a little sleep; but to me the sleep is like recharging a "storage battery."

† Of course the above refers to grown-up or elderly people. Nobody would think of advising that a *baby*, or even children or young people, should conform to the habits of full-grown people. Babies must be fed like little chickens, at short

by disturbance in the digestive apparatus. Let the last meal of the day be early in the afternoon, and let it be something easy of digestion—fruit, for instance. Nice luscious peaches have been my last meal for several weeks past; and with the fruit, as I have several times mentioned, I have a little nice cheese, which I prefer to be old and well ripened. But unless I eat this sparingly there is a cheesy taste left in my mouth when I wake up in the morning. I have also mentioned cottage cheese. The “sanatogen” which we see advertised has, perhaps, done *some* good in calling our attention to the wholesomeness of cottage cheese. Well, the cottage cheese digests perfectly, and leaves no bad taste in my mouth, and is, I feel sure, one of the best and most wholesome foods in the world for babies when they are old enough to eat it, and for old people, and for anybody, in fact. Cottage cheese is now on the market for only 10 cts. per lb., or less than half the price of the regular cheese.

There is one thing more to be added to the sunshine, fresh air, and food and drink, and that is *exercise*. Children will, as a rule, take the proper amount of exercise if they have a chance; and let us each and all, *for Heaven's sake*, provide a place where they can have good air and sunshine. A few days ago Mrs. Root asked me if I heard the shouting and laughing over on the hillside back of our house. What do you suppose I saw when I went out there? Four little girls—Helen, Jean, Katherine, and Elizabeth, were riding downhill in two little wagons. As they have not learned to steer very well, the wagon was usually upset by the time they reached the bottom of the little hill; and then there was a scrambling and kicking of legs and arms (pretty much bare) in the sunshine on that south hillside. As it is covered with soft grass they did not seem to get hurt.

One reason why I so much enjoy going down to Florida is because down there I can dispense with a large part of my clothing and take vigorous exercise right out in the sun. A few years ago a lot of my friends laughed at me because of my fur cap. I have not only dispensed with that fur cap, but I have been getting lighter and lighter caps for the past two years; and when the weather is warm, and most people are complaining of the hot day, I just feel real happy without any cap at all;

and I work in the garden bareheaded hour after hour. I have found it an excellent plan, also, to get off my coat and vest; and with the ventilated shoes that I have described I just feel fine; and when off alone I can sing praises to God for having given me 76 years of life already. Much has been said about the health of the colored children. Many of them would go next to naked if nobody complained. Down in Cuba I saw children *going to school* without a rag of any sort on them—bare hands, bare head, and everything bare from head to foot, both boys and girls. I think there was a protest being made at the time I was there. Just think of the indignity the northern-raised schoolma'am would suffer on being obliged to teach school where boys and girls are sent to learn their A B C's, without clothing! Very likely all of that is done away with by this time; but it is not true, dear friends, that the tough and hardy endurance of the colored race is largely due to the abundance of outdoor air and sunshine on almost every portion of their bodies?

When I spent a part of one *summer* in Florida one of the things I greatly enjoyed was working in the garden in my night-dress. If you have never tried it you can scarcely imagine the delightful sensation of a cooling breeze right on the naked body when you have had exercise enough to feel a little hot and sweaty. The modern style of dress for young girls and women, even though it is objectionable, and may sometimes have been carried to extremes, is, I honestly believe, going to give better health to the young mothers or to the growing girls who expect to be mothers in due time. May God help us to hold fast to the sensible, reasonable freaks of fashion, and to reject and protest against everything that is unhealthful and unreasonable.

I have not said very much about physical exercise in the above, although I have several times alluded to the big advertisements in the line of athletic schools. There are many such schools being started just now which ought to teach people by experience, and sometimes *sad* experience, to beware of some of these pickpockets. Beware of anything or of anybody who first wants \$50 or \$25 for a course of athletics; and if you do not “bite” the first time, as the weeks go by they keep coming down a little. When you are finally offered the same thing for \$5 or even \$3, you may think you are in luck; but you will find what you have paid for is something already taught in our schools or in our health publications. If it is true, however, that

intervals. I think Mrs. Root used to give her babies some warm milk one or two times during the night. Of course they had less as they grew older, and the five little Roots are all alive—yes, very much alive and kicking around, even if some of them *are* over fifty.



you *go through* with your athletics just because the course has cost you \$5 or \$10 when you would not otherwise, it may not be so *very* bad an investment after all. Now, then, whether I am here in Medina with a comfortably fitted-up bathroom, or down in Florida in our comparatively cheap cottage, I bathe all over every day of my life; but before taking my bath I swing my arms and exercise my legs and rub my body all over until I am so well warmed up that I can take a bath without wanting it warmed, even if the temperature of the room should be down to 60 or lower. When the weather is cool I prefer to have the water warmed by some means up to 60 or 70. After bathing I use for a towel a good large piece of cheap cotton cloth, something perhaps half the size of a bed sheet. I take hold of the opposite corners and draw it back and forth across my back, and "see-saw" across my chest, around my legs, over my head, until every part of my body is warmed up by the friction, and by rubbing around my neck, my head, and about my ears, as I have explained before. If I were going to have another bath-room I would have a bay-window toward the south or southeast or both; and when we have long days I could take my bath and get a sun bath at the same time; for I feel perfectly sure that there is *nothing better in the world*, for an ailing person, than to let the sun strike directly on every portion of the body.

You know I am studying and enjoying seeing plants grow, perhaps as I never did before; and before I got this letter I was coming to the conclusion that sunlight is one of the greatest and most important things for plant growth. We have a row of evergreens for a windbreak on one side of our garden. I thought at first the roots of the evergreens had spoiled that side of our garden. No matter how much manure or fertilizer I applied, the plants would not grow there. Melons will not thrive and ripen, because they do not get the afternoon sunshine. All kinds of plants and flowers up near a high fence or building turn their heads away from the building. Sunflowers especially follow the sun. They turn around in the night so they can see the sun when it comes up. Then they look at him, as a rule, in the face all day long, and at night they are peeping and stretching their necks to get the last glimpse of his declining face. Nothing grows around a big thrifty tree. It is not alone a lack of moisture because the roots of the tree take it, for this year there was moisture to spare from spring till fall; but nothing thrives in the shade of a

tree—that is, almost nothing. We have a few plants, it is true, like the ferns and mosses, that cannot bear the full light of the noonday sun, but they are an exception. The same thing applies to animals. See the chickens, how they flop their wings and run in pure enjoyment and delight when they are let loose in the sunshine. Every little while I see somebody trying to raise chickens indoors, sometimes by artificial heat, when the chicks would be a *thousand times* better off right outdoors; and the same thing is true with humanity. Babies and old people must have sunlight as well as fresh air. I suspect one reason why so many people get well by going to Florida is because there is more sunshine there than almost anywhere else. Some years ago the editor of a paper in Tampa said his periodical would be sent free of charge every day the sun did not shine there. Last winter, however, was such an exception that, if he keeps it up, he will have a tough job on his hands. People have mistaken notions about sunshine. Nobody supposes you can stand it to sit right down in the hot sun. Get out and work at something. Stir around and "do good" until the sweat drops from the end of your nose; then you will forget all about its being a hot day, and throw off your useless under-clothing and get a sun bath, as our good friend expressed it about the babies. Then you can thank God for fresh air and for the sunshine, even if the mercury is up to 100 in the shade.

May God bless this message; and may it be the means of giving health and happiness to a crowd of people; and when you have gotten both health and happiness, do not forget to thank God who gives us the sunlight, and—"God saw the light, that *it was good*."

#### BEES CULTURE IN SOUTHWEST FLORIDA.

On page 685, August 1, our good friend F. M. Baldwin gives us an article which I feared was giving almost too bright a prospect for starting bee culture in Florida, after taking into consideration seasons in general. Below is a report for 1915 from our good friend Ault, who *last* season managed to get pretty close to 200 lbs. per colony. You will notice by reading the article carefully that while some locations give a fair yield, another apiary only a few miles away furnished almost no surplus.

#### THE HONEY CROP IN SOUTH FLORIDA.

While I am not in position to give definite statistics of the honey crop in this section of Florida I do not think it will reach above 20 per cent normal. As is common in "off" seasons, the honey flow has varied greatly in different localities. Mr.

Felts, of Palmo Sola, reports a much better yield than last year. With this exception all the reports reaching me have been unfavorable, and I do not think the average yield will reach over 40 per cent of last season.

Some of my apiaries have yielded an average of 40 lbs. per colony; and one apiary averaged 75 lbs. One gave an average of 10 lbs., and my home apiary of 40 colonies has yielded no surplus. In most of my apiaries the bees are well provisioned and strong; and I hope, after the fall flow, to make a better report.

People often remark to me that the bees must be "making" a lot of honey, and then they will tell of seeing bees working on some flower. At the same time, the bees were probably consuming more honey than they were gathering.

The honey-flow from black mangrove was short, though the bloom was profuse.

Coming in an unusually dry time the quality of the mangrove honey was the finest I have yet taken.

June 30 I visited my bees on Anna Maria Key, going by launch from the town of Cortez.

For some reason unknown to me the mangrove on Anna Maria was just coming into bloom, while across the channel to the east on the mainland, and also on the island of Pereka, it was in full bloom.

Coming home in the afternoon I was surprised to see large numbers of honey-laden bees crossing the channel in the direction of my apiary. Some of the bees were crossing diagonally, where the distance across the water was not less than  $1\frac{1}{2}$  miles. We saw only the laden bees flying toward the hives. I suppose the outgoing bees flew higher and more swiftly, and so we did not see them.

#### FETERITA IN FLORIDA.

The first heads of my feterita were heavy with seed, but the heads that put out later had but little grain. The plant produces a quantity of good feed; and where I cut the old growth the sprouts from the roots are four feet high, and growing fast. The worst drawback to its cultivation here are the birds, which come by the hundreds and devour it. The blackbirds and quail are the worst.

My feterita has attracted a great deal of attention, and many have expressed a desire for seed. We have recently been blessed with some showers, and farmers are getting busy.

#### LATER.—HOW FAR MAY BEES FLY ACROSS THE WATER?

A few days ago I wrote you enclosing a brief statement of conditions here, and told of the flight of bees across the channel separating Anna Maria Key on the one side and Palma Sola peninsula and Cortez Point on the other side, with the island of Pereka between. To make sure I was well within bounds I stated that some of the bees flew  $1\frac{1}{2}$  miles across the channel. Yesterday we again made the trip from Cortez to my apiary on Anna Maria,  $3\frac{1}{2}$  miles distant. On inquiry I found that the distance across the channel to the main land was about two miles. Diagonally across the channel to the island of Pereka and to Cortez Point, from which, at the time stated, large numbers of home-coming bees were crossing, the distance is all of  $2\frac{1}{2}$  miles. The bees were flying slowly, and close to the water.

This was of interest to me as showing the distance bees fly across water when conditions are favorable.

ARTHUR E. AULT.

Bradentown, Fla., Sept. 19.

## HIGH-PRESSURE GARDENING

### THE HELIANTHUS AND THE JERUSALEM ARTICHOKE.

The friends may recall that last year I grew four or five hills of the helianthus, and pronounced it excellent food. I supposed, however, that I had dug up all the tubers before going away; and I mentioned that one of the objections was that they were so small it was troublesome to harvest them, especially in clay soil. Well, when we got back to our Medina home, about the first of May, there was a wilderness of helianti a foot high or more, right where I dug them last year. I let them grow, and now we have a great crop. At one end of the helianthus-patch there were some stalks that looked a little different from the others. In fact, they grew six or eight feet high. I did not know any artichokes were planted there; but these grew three or four great big stalks, and produced regular old-fashioned artichokes. Now, we have cooked both the helianthus and the artichokes. We just boiled and served them as we would serve creamed potatoes, and, once more, I cannot see any difference in taste; but the artichokes are so much less trouble to prepare for the table we greatly prefer them. Just one thing more:

Both artichokes and the helianti produce a great lot of green tops before anything else. Both winter over, and are ready to start the first thing in the spring. If this young and tender foliage will be eaten by stock, why is it not profitable to grow for feed? I am sorry I did not think to offer it to the cows, pigs, and chickens. If the tops prove valuable, the helianthus might be preferable, because the small tubers will go so much further in planting. If artichokes are really a substitute for potatoes, or I might almost say *better* than potatoes, I do not see why they have been so long neglected as an article of food.

The letter below touches on the whole thing. Very likely locality *will* have something to do with it.

Mr. A. I. Root:—I wonder if the old Jerusalem artichoke and helianti are not one and the same vegetable. When I was a boy, 60 years ago, we lived in the south part of Erie County, Pa. One of our neighbors grew artichokes quite extensively, and cooked and ate them as we did Irish potatoes. They grew as large as other potatoes, and yielded fully as well. In the 80's I lived on a city lot in St. Joseph, Mo., and planted artichokes in my back yard, and they grew fine, being very productive, and made a splendid salad; but I did not like them cooked. In 1904 I moved to Madison County, Mo. There I got some artichokes from a neighbor. They



did not grow larger than peanuts, and were no good. Was it location or a different variety?

Boicourt, Kan.

D. C. ANDERSON.

#### SWEET CLOVER IN NORTH DAKOTA.

In looking over the agricultural journals of late I have several times said to the men of our firm, "Here is something about sweet clover that breaks the record of anything heretofore." Well, just now from that new monthly, *The National Alfalfa Journal*, I clip the following. Read it and see what you think of it.

A NORTH DAKOTA SWEET-CLOVER SUCCESS; HOW SWEET CLOVER HAS BEEN MADE TO CHANGE THE VIRGIN SOIL INTO BIG AMERICAN DOLLARS—FEEDING AND MARKETING THE CROP.

In the first place, this sweet-clover plant is not a new plant to the old timers in this county. We have seen it grow in yards around buildings, on the roadsides and railroad grades for the last twenty years. All we know is what people from the middle states told us, and they condemned it as a pestiferous weed that eventually ruins the farms. Many cut it while in blossom on the roadsides and burned it in order to destroy the horrible stuff, and still there would be sweet clover the following year.

Stock would not or could not eat the "stuff," hence absolutely worthless, so these Illinois farmers told us, and they certainly knew. Many of us contended that inasmuch as it looked like alfalfa it might contain the same fertilizing properties, and perhaps stock would eat it if they once got the taste of it.

Personally I felt that if the plant prospered so well along the roadside and wherever it could get a foothold in a gravel bank, if it could be utilized as a forage crop the question of diversified farming in North Dakota would be solved forever. I cut some of the green weed and took it with me to my farm to see if the cattle or hogs would eat it. That was in the summer of 1913. I found that, as a matter of fact, both hogs and cattle did eat it after being locked up for half a day without anything else to eat. I tried several times and concluded that the hogs at least would take to it like a duck to water.

I had wondered to myself where I could obtain some seed for a trial. I asked the agricultural experts, but none seemed to know just where. One day, Mr. Burns, the Eddy County man, informed me that he had learned that sweet-clover seed could be obtained in Kansas, and that he would arrange with the agricultural station in that state. However, before his answer came I learned from an article in *Successful Farming*, one of the best agricultural papers in the West, published at Des Moines, Iowa, where I could obtain seed, and further learned from this paper that many had raised the sweet clover for a number of years, and all praised it, both as a fertilizer and for pasture and hay for all kinds of stock, being almost equal to alfalfa. I also learned that the Agricultural Department at Washington has issued bulletin No. 485—which can be had for the asking—and I sent for it and read it several times until I knew all the instructions by heart.

After being fully convinced that sweet clover is just the very plant that we need on our fertility-depleted fields, I purchased white-blossom sweet-clover seed to sow twenty acres, prepared the soil according to directions as sent out in Bulletin 485, and seeded twenty acres at the rate of fifteen pounds to the acre, May 10, 1914.

In order to outline the results fairly I feel it necessary to mention more particularly the result as a hog pasture than for any other purpose. We

had two small hog pastures containing one and one-half acres each, or three acres in all, that had been seeded to oats and barley for several years previous and hogged down. Everything had been eaten to the ground—grain, straw, and all. We disked these patches twice, and seeded 15 pounds of hulled seed to the acre, and left the hogs on it from the day it was seeded.

In spite of the fact that some fifty large hogs and as many or more pigs tramped over this ground, picking what young plants had started to grow, they failed to destroy the roots, as it kept on growing all summer. I seeded fifteen pounds to the acre on the rest, or seventeen acres. Seven acres of this was seeded on alfalfa ground that was seeded too thin to make a crop of value. On two acres I seeded barley as a nurse crop. Nine acres of the plat was on corn stubble. We disked it two times, and seeded as before. Two acres were spring-plowed and packed with a Dunham packer. Both the corn stubble and spring plowing were seeded without a nurse crop.

On June 27 we had this plat of 17 acres fenced in and turned the hogs on it—over 50 full grown and about one hundred pigs. The sweet clover was then eight to ten inches high. On July 8 we concluded that the hogs could not eat it down fast enough, and we cut all but the spring plowing and barley for hay. We gathered fourteen loads; but there was some pigeon grass and some alfalfa along with the sweet-clover hay.

The hogs continued to eat it, but could not keep it down altogether. We fed them not to exceed a pound of barley a day. About the middle of July we turned in nine calves. They went at it as though they had been trained. Still the clover grew too fast, and we turned in fifteen horses, among them seven mares with colts. About the first of August the hogs had increased to over 200, but still this 20 acres seemed to supply all the nourishment that these 229 head needed—excepting, of course, what we fed the hogs—and continued to feed them all until the middle of September, when we removed most of the horses. About the first of October we left only the weaned colts, calves, and the hogs, and they continued to feed on the clover until freezing time. About the middle of October we fenced in 26 acres of corn for the hogs, but still they turned to the sweet clover for green food, and even went so far as to pull it up by the roots and eat it, roots and all.

I will say in addition that I never saw stock do so well on any pasture in North Dakota. I have never raised as fine a bunch of calves during my thirty-five years' residence, and have never gained such profit on hogs as I did on this 20-acre plat of white sweet clover. I may add that I shall seed 50 acres of corn stubble to sweet clover this spring for additional hog pasture, as I have 135 or more sows which will have pigs in the spring.

In addition to my experience with sweet clover there are eight others in this vicinity who have gone "wild" and seeded from one to three bushels; but this has mostly been seeded with a nurse crop. I also seeded about one acre in a barley-field, and it looked very good after the barley was taken off, and will no doubt make a heavy stand the coming year.

Some have asked if sweet clover should be preferred to alfalfa. So far as I am able to judge I would answer yes and no. It depends entirely upon your local conditions.—P. M. Mattson.

We think it will pay our friends who are interested in sweet clover and alfalfa to subscribe for this alfalfa journal, published at Sioux Falls, S. D., at only 50 cts. a year.

# TEMPERANCE

## HOW PROHIBITION "STOPPED BUILDING."

TUCSON, Arizona, Oct. 20.—When Arizona "went dry" it was asserted that the result in this city would be "no more building;" that the 32 vacant saloon buildings would be such a drug on the market that not another structure would be erected in the city in a long time. Now, according to the report of the city building inspector, 1915 will show the biggest building record in the city's history, the building cost falling, all told, not very much below half a million dollars; whereas the record of 1914, the last license year, fell below \$400,000, and 1913 just exceeded \$300,000. The emptiness of the "32 empty saloon buildings" vanished like the dew before the necessities of legitimate business.—*The Vindicator*.

## PROHIBITION IN ARIZONA.

Bro. Amos:—In regard to whisky and the effect of its being "cut out" here: It has caused much trouble for some of the officers to watch the "boot-leggers," as they run their autos over the line in New Mexico, and smuggle it in. But the law is so strict that they will get tired of it soon. It seems as though "old Ohio" ought to be as much civilized as Arizona.

Pima, Ariz., Oct. 29.

J. H. ROOT.

My good brother, Ohio is pretty well "civilized," except the great cities—Cincinnati, for instance. They are, however, well along in the A B C class, and will surely "get there" if we "faint not." See the following from Wayne B. Wheeler:

## OHIO ON THE "UPGRADE" STILL.

Last Tuesday's election in Ohio is another evidence of the fact that the progress of a righteous cause is absolutely irresistible. Twenty-two years ago, when the League work started in Ohio, if we made any mention of the possibility of statewide prohibition it was ridiculed. It was a struggle to secure even local option for the smallest units. The sentiment gradually grew until the people secured local-option laws for all the units of government up to the county. The high tide under county option and local-option laws was 63 dry counties. The vision of the people continued to broaden, and their convictions continued to deepen until on the statewide vote 70 counties went into the dry column.

In this last election the majority of 84,000 against prohibition was reduced to approximately 40,000. Seventy-four counties of the eighty-eight voted for statewide prohibition (unofficial returns). This splendid result was accomplished in spite of the fact that it was an off year in voting. The city vote was heavy because municipal officers were elected, and the rural vote light because no state officers were elected.

There is nothing discouraging in the result; on the other hand, it is positive proof that, with steady fighting, more education, better organization, and with half as much gain in the next contest, victory is sure.

W. B. WHEELER,

Attorney for Anti-saloon of America.

Columbus, O., Nov. 3.

## THE DAVIS LAW DECIDED CONSTITUTIONAL.

We clip the following from the *Florida Times-Union*:

Supreme Court, by a close vote, 3 to 2, declares Davis Package Law constitutional. Opinion filed early yesterday afternoon in habeas corpus proceedings brought to test validity of Davis Package Law.

Decision had been eagerly awaited for weeks throughout the state. Sections 1 and 7 of the law were attacked by counsel for liquor-dealers in effort to have the law declared unconstitutional. Law was considered exceedingly stringent; Chief Justice Taylor and Justice Ellis rendered dissenting opinions.

See our recent back numbers for particulars in regard to Davis law.

## "BOOZE" ADVERTISING; CAN'T SELL PAPERS HAVING SUCH IN GEORGIA.

We clip the following from Bradentown *Evening News*:

## GEORGIA SENATE PASSES DRASTIC LIQUOR LAW.

ATLANTA, Nov. 9.—The Georgia State Senate, in session here, passed the Mangham-Ransom bill prohibiting liquor advertisements in any form in Georgia.

The provisions of this bill make it a misdemeanor to offer for sale any newspaper, periodical, or magazine which contains such an advertisement.

Now, then, say what you like about Georgia, but give her credit for the above. What other state dares follow suit?

## "BOOZE" ADVERTISEMENTS—ANOTHER GREAT CITY DAILY TURNS THEM DOWN.

*The Detroit Journal* to eliminate whisky, low theaters, and objectionable copy from its advertising columns.

No whisky advertisement, no objectionable medical advertising, no dubious financial advertisements, no parasitical advertisements, no debasing theater advertisements, no loan-shark advertisements, no unclean or doubtful advertisements of any kind will be accepted by *The Journal*.

To *The Journal's* 500,000 readers, and to its thousands of advertisers, to all the world, we make this bold and resolute announcement.

It has been our advertising policy in the past to refuse everything that seemed positively injurious, vicious, or debasing to the public taste.

*The Journal* has, after years of militant labor in the interests of a cleaner Detroit, found itself to be the acknowledged leader and exponent and mouthpiece of public decency.

From *The Detroit Journal*, October 28, 1915.

## "TWENTY-FIVE TIMES" AS MANY WITH SALOONS OPEN.

Senator Peterson quoted from police records to show the enormous decrease in drunkenness in Moorhead, Minn., after the saloons were closed. For July, August, and September, 1915, there were 88 arrests for this cause as compared with 2165 for the same three months of 1914, or approximately twenty-five times as many arrests for drunkenness with the saloons open.—*Union Signal*.

## "GOD'S KINGDOM COMING."

A most excellent and exhaustive article in the *Christian Herald* for Nov. 10, entitled "The Race-wide War on the Liquor Traffic," closes with these words:

"The great world movement against alcohol is helping to answer Christ's prayer: 'Thy kingdom come. Thy will be done on earth as in heaven.'"